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VOL - VIII

Editors

Nini Chanda

Roma Chakraborty



University of Calcutta

2008-2009



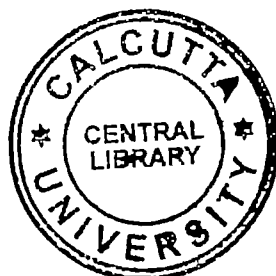
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Contents

<p>Comparative Religion as a <i>Sadhana</i>: A new Approach to the study of Religion as enunciated in the <i>Navavidhan</i> of Keshab Chandra Sen</p> <p><i>Sunrit Mullick</i></p>	1
<p>Appeal of Upanishads in the Modern Age of Science</p> <p><i>Swami Atmapriyananda</i></p>	26
<p>Freedom And Nothingness A Phenomenological-cum- Existential Approach to The Problem From Jean Paul Sartre's Viewpoint.</p> <p><i>Aditi Bhattacharya</i></p>	59
<p>Kant on Aesthetic Necessity</p> <p><i>Gopal Chandra Khan</i></p>	73
<p>Psychologism, Necessity and Indian Logic</p> <p><i>Nirmalya Narayan Chakraborty</i></p>	81
<p>Necessity and Contingency in Indian Philosophy</p> <p><i>Nirmalya Guha</i></p>	93
<p>Naming, Necessity and Essence</p> <p><i>Indrani Sanyal</i></p>	100
<p>Reflections on Logical 'System' in Leibniz and Rationalism—transition to historicity and authenticity</p> <p><i>Kalyan Bagchi</i></p>	113
<p>Jaakko Hintikka's Constructive Embeddability Technique of Modal Logic</p> <p><i>Dr. Ramesh Chandra Das</i></p>	120
<p>An Account of Social Self: 'Being-In-The-World'</p> <p><i>Nini Chanda</i></p>	139

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Comparative Religion as a *Sādhana* : A new Approach to the study of Religion as enunciated in the *Navavidhān* of Keshab Chandra Sen

Sunrit Mullick

Comparative Religion as an Academic Discipline

Comparative Religion, also known as Religious Studies or the Study of Religion, is a rigorous academic discipline in several countries in Europe and the United States. (Unfortunately, in India the subject is taught from Bachelors to Ph.D level in just two or three universities. The wisdom of this peculiarly as decided by the mandarins of the Ministry of Education and the UGC, defies comprehension, since India is a veritable laboratory in which some of the largest number of religious traditions may be studied, as a result of which foreigners, both tourists and students, routinely choose the country as a destination.) As an academic discipline, Comparative Religion emerged in the United States in the universities of Chicago, Harvard and others in the late nineteenth century, about the same time as it emerged in the universities in England, Germany and the Netherlands, among others.

The variety of religious traditions among the peoples of the world was known from very early times, primarily as a result of trade among nations. The Hebrew Bible that dates from the pre-Christian era, describes the religions of the many non-Jewish people among whom they lived, sometimes as rulers and more often as the ruled. Accounts of different religions are found in the writings of several ancient Roman, Greek, Arab and Chinese scholars. But it was only around the sixteenth century that these accounts began to be systematized by scholars who began specializing in the phenomenon of religion. By the nineteenth century, as several Western powers entered into non-Western societies to colonize and rule, they brought with them scholars who began to study and interpret the religions of those societies. These scholars borrowed the methodology of this new field of study from

the methodologies of the prevalent academic disciplines of theology, history, anthropology, sociology, psychology and phenomenology. When Comparative Religion began to be taught in the universities of Europe and the United States, it acquired a new-found status as a legitimate field of study, an academic discipline on a par with the other prevalent disciplines.

Śloka-Saṁgraha, or Compilations from World Religions

Keshab Chandra Sen (1838-1884) and the *Navavidhān* occupy a central position in the emerging discipline of Comparative Religion in the nineteenth century, on account of the historical situation of the colonization of India and the concomitant scholarship of the time. In nineteenth century India, Keshab's precursor Rammohun Roy set in motion the wheels of the comparative study of religions through his translations of Islamic, Christian and Hindu texts, though not for the purpose of instituting an academic discipline, but for his program of social and religious reform, culminating in the vehicle known as the Brahmo Samaj to carry out those reforms.

Rammohun's worthy successor Debendranath Tagore expanded the Brahmo Samaj into a movement in upper India, but he was not as liberal in his theological outlook as his predecessor, preferring to confine himself within in Hindu scriptures alone. But his successor Keshab Chandra Sen was a creative genius who left his mentor Debendranath far behind to enunciate a theological doctrine that took in its sweep the prophets and religions of the world. In so doing, he turned the academic discipline of Comparative Religion into a religious discipline, or *sādhana*, and that is the subject of this lecture.

The difference in outlook between the conservatives led by Debendranath Tagore and the progressives led by Keshab Chandra Sen caused the first schism in the Brahmo Samaj. On 11 November 1866, the progressives seceded and founded the Brahmo Samaj of India, in token of spreading out as a pan-Indian movement. The original Brahmo Samaj headed by Debendranath came to be known as the Adi (first) Brahmo Samaj. The Brahmo Samaj of India, freed

from the conservatism of the older Brahmos, proceeded to put their ideas of Universal Theism into practice. A first manifestation of this was the publication of a book called *Śloka-Saṁgraha*, compilation of 202 theistic texts from the Zoroastrian, Hindu, Jewish, Christian and Muslim scriptures. Texts from more world religions, such as Sikhism and Confucianism, were added in later editions. Readings from the *Śloka-Saṁgraha* constituted a basic and permanent feature in the worship services of the Brahmo Samaj of India.

The Study of Religion

Around 1877, Keshab expounded his idea of religious eclecticism. For Keshab, eclecticism had two components: one had to do with the various facets of the human personality and the other with world religions. In respect of the former, he reiterated that the four ways to realization recognized by traditional Hinduism—*jñāna*, *bhakti*, *karma* and *yoga*—were not mutually exclusive, but needed to be developed simultaneously in order to produce a complete and harmonious personality. In respect of world religions, Keshab said that his eclecticism was not one which put together diverse elements from the world religions to make up a new religion: it was not theological eclecticism that he meant, but religious eclecticism:

not a cold intellectual recognition of all things and everything true, but the deep spiritual assimilation of all forms of truth and goodness in life. That man who...puts on "shreds and patches" of all kinds of theologies, must make himself... ridiculous...a monstrous caricature of eclecticism. True eclecticism assimilates, and not merely admires and approves.¹

In 1877 Keshab assigned the systematic study of four religions—Hinduism, Buddhism, Christianity and Islam to four of his disciples, Gour Govind Roy, Aghore Nath Gupta, Protap Chandra Majumdar and Girish Chandra Sen respectively. (A fifth disciple, Troilokya Nath Sanyal, was appointed Professor of Music and

Poetics). The four “Professores” were close and intimate associates of Keshab, who had joined him at a very early stage. They were thoroughly conversant with the thought process of their leader. As for the works each produced, one is impressed with the magnitude of their writings. In them, we are reminded of the analytical precision of Rammohun Roy, while the inspiration is that of Keshab.²

There is a significant observation to be made at this point, upon which this essay hinges: the works of the four scholars came in for the highest commendation by the followers of those traditions. Protap Chandra Majumdar’s *The Oriental Christ* was highly praised in Christian America, and Girish Chandra Sen’s translation of the *Qur’ān*, the first ever in the Bengali language, was an immediate success with Bengali Muslims³, as was Aghorenath Gupta’s *Śākyamuni Carita*, the first ever life of the Buddha in the Bengali language. Each one of their works stands the test of utmost academic rigour, but that is not the chief reason for their acceptance by the academic world; and more importantly, by the respective faith communities. To understand the reason, we turn next to an examination of the *Navavidhān*, or New Dispensation declared by Keshab Chandra Sen.

Sādhū-samāgama

The *Navavidhān* phase is a short one, between 1880 and 1883. Keshab announced the *Navavidhān* at the anniversary celebrations of the Brahmo Samaj of India in January 1880. In his sermon, Keshab used the imagery of the birth of a New Child (*nava śīśu*). He described the *Navavidhān* as the latest phase in the evolution of the Brahmo Samaj, in whose its heart were to be found the *Vedas*, *Vedānta*, *Purāṇas*, *Tantras*, the *Bible* and the *Qur’ān*. Jesus, Moses, Caitanya, Nānak, Kabir, the Buddha, Muhammad and all other prophets, sages and teachers had blessed the new child.

The *Navavidhān* phase is notable on account of certain rituals that Keshab performed, to explain visually the intellectual doctrines of the *Navavidhān*. One such ritual was *Sādhū-samāgama* or

“Pilgrimage to the Prophets.” Back in 1866, in his lecture “Great Men”, Keshab had dealt with the mode of God’s revelation, which he said was a threefold process: revelation in nature, in human history and in the human soul. In human history, God revealed himself through great men. In the field of science, the great men of science are accepted universally, by all people. In the field of literature, there is some degree of universal acceptance. But in the field of religion, far from universal acceptance of the prophet or founder of a particular tradition, exclusivity is the norm. In fact, followers of a religion even claim that only they have “ownership” of their prophet. In this way, every prophet is alien to the followers of other traditions. Keshab instituted the ritual of *Sādhu-samāgama* to break down this alien-ness. He conducted a series of discourses on the lives of great men, and then conducted meditations in which the congregation was led into a kind of psycho-spiritual communion with the spirits of those great men. Majumdar writes about the ritual that “all great men, thus honored, were accepted either as prophets of religion, or philosophy, or morality, or science, and by intense meditation and study their teachings were realised in spiritual consciousness.”⁴ This ritual was called *sādhu-samāgama*.

Thus, the religious eclecticism of the *Navavidhān* is a spiritual eclecticism, in which the spirit of oneness with the prophets of history is to be cultivated. In effect, this means that what is alien to a particular tradition is to be made familiar. Once they are made familiar, they are to be accepted as one’s own. Thus Christians can begin to claim Muhammad and the Buddha as their own prophets, just as Hindus can claim Christ and Muhammad as their own. Once the exclusive “ownership” of prophets is given up, people will begin to understand that all prophets are the common property of humanity; conversely, the acceptance of all the world’s prophets as one’s own will lead to a real vision of one humanity. Not only prophets of religion, but scientists, litterateurs, poets,—all great people who have made contributions to the progress of humanity—are to be acknowledged, accepted and assimilated into one’s own religious tradition.

In 1883, toward the end of his life, Keshab wrote his last work, the *Nava Samhitā* or “New Code”. This was a book of laws to regulate the life of the *Navavidhān* Brahmo. The initiatory vow in the *Nava Samhitā* sums up the philosophy of the *Navavidhān*:

The Church Universal is the depository of all ancient wisdom and the receptacle of all modern science, which recognises in all prophets and saints a harmony, in all scriptures a unity, and through all dispensations a continuity, which abjures all that separates and divides and always magnifies unity and peace, which harmonises reason and faith, *yoga* and *bhakti*, asceticism and social duty in their highest forms, and which shall make of all nations and sects one kingdom and one nation in the fullness of time.⁵

Philosophy of the *Navavidhān*

One looks in vain to Keshab Chandra Sen for a systematic, philosophical exposition of the *Navavidhān*. We do not find a single lecture, sermon or writing in which Keshab has expounded *Navavidhān* philosophy according to classical Indian or Western philosophical method. The lack of systematization has caused much frustration among historians writing on the subject of the *Navavidhān*. The result has been, as historian David Kopf has remarked, complete confusion about the *Navavidhān*:

His [Keshab’s] quest for a universal religion, which his proponents looked upon as the most profound synthesis of East and West yet conceived by any living being, was lampooned by critics as a hodgepodge of culturally discordant religions held together by the elastic band of a highly personal mystic vision.⁶

The *Navavidhān* has been interpreted in a variety of ways, but most interpretations have been one-sided, that is, each has tended to concentrate on that fact of the *Navavidhān* which has appeared to the interpreter most promising or most convincing for establishing his or her thesis; in short, idiosyncratic. Thus, some

have interpreted it as a purely religious movement, promising individual salvation for its followers, others have seen it only as a reform movement within Hinduism, and others, like M.M. Thomas, as a vehicle for introducing Christianity in an Indian framework.⁷ All of these are true, but only partially. To integrate these partial interpretations about the *Navavidhān*, its philosophical foundations must be considered, a topic that recent works on Keshab and the *Navavidhān* have not given adequate attention to.

Kopf has commented on this fact:

....the real giants of the Bengal renaissance were neither simplistic Westernizers or traditionalists, but highly sophisticated cosmopolites with subtle, eclectic intellects. The difficulty is that prevailing explanations for the ideological fruits of intercivilizational encounter have been too narrowly confined within the framework of Westernizer-nativist response among the intelligentsia. It is assumed that either a man identified with the West (and was thus a rationalist and modernist), or he identified with his own cultural heritage (and was thus traditionalist or orthodox).⁸

Kopf has termed the eclectic religious approach of Keshab a philosophy of “encounter and acculturation, best expressed in the ideologies of comparativism and universalism.”⁹ This is a good definition toward a general understanding of the *Navavidhān*. As far as I am aware, the best attempt of date which treats of the *Navavidhān* as systematic theology is Krishna Behary Sen’s *Navavidhān Ki?* [What is the New Dispensation?].¹⁰ Prior to this book, Protap Chandra Majumdar wrote two works on systematic theology—*Faith & Progress of the Brahmo Samaj* and *Spirit of God*—although he did not set out the philosophical foundations of the *Navavidhān* as Sen has done. The following discussion is based on Sen’s work, and Majumdar’s *Faith & Progress* and *Spirit of God* have been used to flesh out some details.

There are two general views of God which the Navavidhān rejects:

I. God-without-attributes or the *nirguṇa brahman* of Hinduisim. The clearest exposition of this view is Śaṅkarācārya's interpretation of the Vedānta as *advaita*, the philosophy of absolute non-dualism. According to this view, the only legitimate assertion that can be made about God is that he is. Only God's ontological status can be affirmed and nothing more. But according to the *Navavidhān* a thing can be known only by means of the attributes. So it is with God. While the attributeless God may be a convenient construct of philosophy, it cannot be satisfying to the human soul. There is a direct relation between finite human beings and the infinite God. The human soul is aware of itself as finite; this very awareness of finiteness gives a direct awareness (*anubhūti*) of something that is infinite. That infinite something is called God.

The finite human soul is the center of feelings (*bhāva*) like wisdom, love, action, truth and honesty. Because the human soul is aware of itself as finite, it is aware of these feelings as being finite too. Thus it becomes aware of infinite feelings (attributes/qualities) in the infinite God. This is direct perception (*anubhūti*) of infinite wisdom, infinite love, infinite action and so on. The human soul is aware of itself as imperfect and sinful. The awareness of imperfection is due to the direct perception that there is something that is perfect, against which the soul judges its imperfection. That perfect being is called God.

II. The deistic God. This view is a typical European construct, a view of a God who has no active, continuing relation with the world. In his lecture on "Great Men", Keshab rejected deism: "Does the universe bear the same relation to God as the watch does to the watch-maker? Certainly not. The world cannot exist for one moment without God. He is its life and power."¹¹ In a similar vein, Schubert Ogden has criticized deism in that "the method of this theism has consistently been some form of the traditional *negationis et eminentiae*, and its most characteristic

assertions have always involved the denial that God is in any literal sense temporal or really related to the world.”¹²

So the first premise of *Navavidhān* philosophy is “God is”. But the God of the *Navavidhān* is neither attributeless nor deistic.¹³ God is infinite, perfect and the source of infinite feelings. God is present as life-force (*prāṇa*) and power (*śakti*) which are manifest in temporality. God is therefore intimately concerned with affairs of the world. These are direct perceptions:

These experiences are so simple and natural that under certain conditions of mental awakening they exact universal response.... Whatever ultimate mystery there may be in the great depths of the Eternal Being, there is no expression that makes such a direct appeal to the restless instincts of our nature that God is, that he is near, that he is in the heart, and that he is great and good.... An unnatural God is the imagination of an unnatural man.¹⁴

According to the *Navavidhān*, religions are dispensations. Dispensations presuppose a dispenser, who is called God. But this dispenser is no abstract God but intimately personal. He dispenses the religions through human beings, called prophets, who are fully human in order to communicate their experience to human beings. Practical religion begins with recognition of the prophets:

An abstract God is no God. He may be an idea, an opinion, a sentiment, a moral principle to satisfy the mind; but until he reveals himself, is embodied in something which the senses as well as the soul can grasp, religion will never influence life. The incarnation of the Spirit, is therefore, the first truth of practical religions.¹⁵

In his lecture on “Great Men” Keshab spoke of three modes of the revelation of God: in nature, in history and in the human soul. The second mode of God’s revelation is in history. History is the biography of great people, called Geniuses, Heroes, Prophets, Reformers and Redeemers. True incarnation, said Keshab, “is not, as popular theology defines it, the absolute perfection of the divine nature embodied in mortal form; it is not the God of the universe

putting on a human body—the infinite becoming finite in space and time, in intelligence and power. It simply means God manifest in humanity; not God made man, but God in man.”¹⁶ Great people possess a representative character—they represent their country and age and they represent specific ideas.¹⁷ Great people are above ordinary humanity, but not in essence. Their elevation above ordinary humanity is due to their having lived up to high moral standards, thereby demonstrating that the possible can be made actual:

The object of all spiritual culture is to plant ourselves permanently on the highest plane of moral aspiration, to become forever what we wish to have been. We need for this examples; we need those lofty vision of their souls. Unless the possible becomes actual, moral aspiration is a perpetual agony.¹⁸

Great people are, according to Krishna Behary, Sons of God. When humanity loses sight of the infinite, God sends great people who embody ideal sonship and take humanity god-ward again.¹⁹ It is not the physical appearance of such people that holds our attention, but the spirit (*bhāva*) that shines through them. For example, what attracts us about Jesus is not what he looked like, for we know nothing of that, but his spirit which shines through Christian tradition.

Every prophet is unique. Each reveals to us a particular facet of the divine reality according to the needs of the age. For example, if Caitanya had preached his gospel of *bhakti* in Jerusalem, the Jews would have thought him insane; if Jesus had preached humility in Mecca, the Arabians would have found it incomprehensible.²⁰ The uniqueness of a prophet lies in his ability to unerringly discern the need of the age. “To have an undoubting foreknowledge, an instinctive anticipation of what humanity must grow into, and to have the courage and strength and success to be that, makes the originality of the prophet’s character.”²¹ Therefore every revelation is unique; no revelation can claim superiority over another. This claim is the cause of religious rivalry.

The third mode of God's revelation is in the human soul, which Sen calls the Holy Spirit. The deeds of great people often cannot be comprehended by our limited faculties. Their actions sometimes seem unusual. If we judge them from our perspective, we may arrive at wrong conclusions. They can be comprehended only from the point of view of God. Great people do nothing of their own will; their own will is completely effaced. They do the will of the Father, as Jesus did.

In order to understand the prophets, our own will needs to be effaced. Our feelings of pride, desire and passion must be emptied. The vacuum is then filled by the Spirit of God. It is only then that the prophets and scriptures reveal their secrets, they become intelligible and come alive. In turn, they lead us back to God.

This three-fold process of the manifestation of God is an eternal activity of God, known in Hinduism as *lilā*, the divine sport. *Lilā* is a common expression in Hinduism, denoting the relationship between God and the world. It is an attempt to explain the origin of the world, the cycle of birth and death, the problem of evil and all other phenomena that baffle human understanding. *Lilā* is a frank admission that, try as we might, there is much about the world and ourselves that simply defies explanation. For example, the basic questions, why are we born and what is the goal of life, have no exhaustive explanations. At best, we might say, it is the divine sport, *lilā*. In other words, only God knows why.

Now for someone enjoying successes in life, this may be a pleasing explanation, but for those who have to go through what is to them unnecessary suffering, *lilā* is not so convincing. Majumdar acknowledges this: "There is a mystery that cannot be got rid of in the beginning, sequence, and termination of events. How some men and nations succeed in whatever they put their hands to! How others fail in their very best endeavors!"²² Yet, *lilā* must be trusted and its purposes discerned, for it is not purposeless but a definite will acting in human history: "Fate is indeed a power, but it is not a blind or lawless power: it is a higher intelligence, a higher method of love, that corrects that feebleness

of our conceptions....’’²³ It is this trusting dependence on a higher will that turns weakness into strength: “The higher law is the law of the sonship of God—of dependence, self-sacrifice, love, trust in divine inspiration. Here weakness becomes strength, foolishness more wise than worldly wisdom, and defeat is turned into victory.’’²⁴ Ironically, this change in the human self is also the *līlā* of God.

Sen next enters on an illustration of the philosophy, taking as examples the Buddha, Socrates, Jesus and Caitanya. All of them, he says, destroyed the false sense of ego (*ahamkāra*) and were filled, respectively, with compassion, wisdom, love and *bhakti*. These *bhāvas* or attributes were the special characteristics of those men and the central spirit of the religions/philosophies which arose after them. The *Navavidhān* is a dispensation of the modern age, marked by the encounter of East and West. The central spirit of this dispensation is harmony of prophets, scriptures and spiritual disciplines.

The continuity of prophets, dispensations and scriptures can be discerned only from the perspective of God. This is a philosophical premise, but to turn that discernment to reality involves *sādhana*, religious discipline. The first step of this discipline entails sympathy (*sahānubhūti*).²⁵ Sympathy, says Sen, is to put oneself in the situation or circumstance of another. Sympathy is a feeling of emotional response to another’s situation. The practice of sympathy has the potential of uncovering infinite emotions in human selves.

Sen gives an example from the Buddha’s life. The Buddha had never experienced pain. One day a friend of his shot a bird with an arrow. The bird fell to the ground. The Buddha picked up the bird and tried to comfort it, but it kept writhing in pain. The Buddha wondered why, so he removed the arrow from its body and plunged it into his own hand. He experienced searing pain for the first time. He put the bird out of agony by offering it some water to drink²⁶ and henceforth preached compassion for all beings. To understand Buddhism, we must understand the Buddha. To understand the

Buddha, we must enter into the *sāadhanā* of cultivating sympathy with his spirit. Cultivating sympathy with the Buddha developing the *Buddha-bhāva* of compassion.

Sympathy is therefore the cultivation of spiritual oneness with others. To understand other religions, one must understand their prophets. To understand the prophets, one must become one with their spirit. Thereby one becomes richer by adding *bhāvas* to one's personality. This is *sādhū-samāgama*, or pilgrimage to the prophets.

Thus, according to the *Navavidhān*, the relationship between God and humans is one of *bhāva* or feeling. The human soul is finite in its *bhāvas*, but has an innate capacity to expand its *bhāvas*, to be more in touch with its feelings, according to the extent to which the *bhāvas* of God are revealed to it. Evil does not reside in God; God is all-good. Humans have the propensity for evil, but they have an equal propensity for being good by cultivating in themselves the *bhāvas* of God. Each prophet is an embodiment of a particular *bhāva* of God and in so far as the human soul can cultivate sympathy (*sahānubhūti*) with a prophet, so far does he/she become a possessor of an additional *bhāva*. This is therefore an explicit affirmation of the essential human-divine nature of every human being. Majumdar makes this clear:

the greater the advance in wisdom, the clearer and stronger the sense that the Spirit of God is ever familiar, though always equally new and strange, most like unto us in our deepest being, most congenial to our better nature. There is a unity in man with himself in his highest and lowest moods: there is also a unity with God....²⁷ ...the character of every man holds the divine somewhere. God knows it, the prophet sees it: we cynics do not. Each individual is a point of radiance in the great corona of humanity whereof the substance is God.²⁸

Navavidhān philosophy assumes that all revelations are partial facets of one divine personality. The divine personality is infinite, so there will be infinite revelations. The present age is unique as compared to previous ages, because a world civilization has

become a reality. Nations and religions are beginning to adjust to this global situation where the fate and future of one is inextricably linked to that of others. A new attitude is becoming necessary. That attitude is one where one's individuality—national, political and religious—must be maintained, yet enriched by adding those particular facets of the divine personality which have been revealed to other peoples. This is the principle of harmony of the *Navavidhān*. This harmony is based, not on picking and choosing from the doctrines of world religions, but on assimilating the spirit of prophets, *sādhu-samāgama*. The *Navavidhān* interprets scriptures according to the particular spirit of the founders of the religions.

We may ask, is the *Navavidhān* a new religion? The answer is both yes and no. If religion means an institution with claims to exclusivity, the *Navavidhān* is not a religion. If, on the other hand, religion means a certain attitude of looking (*darśana*) at God, the world and humanity, then the *Navavidhān* is a religion. It offers a view; a perspective from which to interpret the phenomenon of religion.

On the theoretical level, it sees religion as a series of continuous dispensations, all of which, from the most "primitive" to the most modern, contribute to the enrichment of human personality. None of these dispensations were accidental but arose out of definite socio-historical needs. According to the *Navavidhan*, human history is the record of divine dispensations. On the spiritual or religious level, it offers a way of discerning the Spirit of God manifesting itself in history through the spirits of great people.

Comparative Religion as a *Sādhana*

Let us now examine what the "professors" of Hinduism, Buddhism, Christianity and Islam had to say about their accomplishments. Gour Govind Roy wrote in the *Dharmatattva*, the Bengali periodical of the *Navavidhān* Brahmo Samaj, that he had discovered that philosophical and popular Hinduism are not antithetical to each other:

To find harmony in disunity—we have been initiated with that spirit, and in that direction we are progressing. There is no peace until disunity changes to harmony. When I was first initiated into the Brahmo faith, this spirit was not prevalent. The mind sought disunity more than harmony. The reason was to glorify my own religion at the expense of others'. Today I am quite ashamed to admit that where previously I had seen the weaknesses of another religions, now I am speechless at its deep meaning and significance. After the *Gita* the *Bhagavata* [purana], after the *Bhagavata* the *Vedanta*—from disunity to harmony....The conflict in my mind between the *Vedas* and the *Vedanta* gradually resolved itself.²⁹

Aghorenath Gupta wrote in the preface to the *Sākyamuni Carit*, the first Bengali life of the Buddha:

The Buddha is not dead—his spirit lives on. I am speechless at his personality. I have drunk of the nectar of his *nirvana*. That personality is now part of my own soul. He has entered into the very root of my life. His peaceful trance [*samādhi*], communion, asceticism and passionlessness, purity and compassion have conquered my heart. The peace of my soul has achieved union with the peace of his. In my own meditation I have realized the great happiness of the Buddha's meditation; my spirit soars free.³⁰

About Girish Chandra Sen, who wrote the first Bengali translation of the *Qur'ān*, in addition to some thirty other works on Islām, the Muslim *moulavi* (head) of the Calcutta Madrasa (Islamic College) said, "The extraordinary spiritual culture (*sādhana*) and the remarkable success of Girish Chandra may be said to be the eighth wonder of the world."³¹ Dwijadas Dutta was another *Navavidhān* Brahmo scholar who assimilated the spirit of Islam. Chatterji writes in *Samanvaya Mārga* that in nineteenth-century Bengal, Dutta was among only four people who had learned Arabic—the others being Rammohun Roy, Girish Chandra Sen and Baldeo Narain (another *Navavidhān* missionary).³² Dutta

had taken a vow to work for Hindu-Muslim unity and with that object he founded the *Sarvadharmā Samanvaya Āśrama* [Harmony of Religions Hermitage] in 1931 in Comilla (Bangladesh). He read the *namāz* [Islamic prayers] with Muslims in their mosque, probably the first non-Muslim to do so. A rumor was spread that he had become a convert to Islam. Dutta replied in an English lecture, "I believe that God being one, true Islam and true Hinduism are one....It is a mistake to speak of me as a convert or as one who has changed his faith; I am a Brahmo; and in my eye a true Musalman and a true Brahmo are one."³³

Protap Majumdar wrote in the preface to the *Oriental Christ* that his account of Jesus was based on his personal communion with the spirit of Jesus:

Mine are but the human prayerful endeavors to realize the character and spirit of the Son of God. Mine are but attempts to accept, assimilate, and embody ideal humanity....I pretend not to criticize, experiences, fanned by the guardian spirit of a beloved teacher....³⁴

We see, then, that in the academic study of religions other than their own, all the scholars had a two-pronged approach—scholarly criticism combined with intuitive sympathy with the spirits of the prophets, or *sādhū-samāgama*. This is what constitutes Comparative Religion as a *sādhanā*. Their efforts appear to have been motivated by the desire to search for the spirit of the religions they were studying and not merely their externals. This *sādhanā* is relevant to the methodology of religious studies. As far as possible, the researcher must attempt to identify himself or herself with the subject of the study. This task involves both rational investigation of objective phenomena as well as a non-rational intuitive sense.

The *sādhanā* that prepares the comparative religionist to penetrate spiritually into the material is known today as the phenomenological approach, one of the better methods for the study of religion. This method was adopted by the professors of religion and applied to the study of the respective religions. That

is why their works were original, influential and acclaimed by followers of those religions, as well as having transformative effect on the personalities of the professors themselves. In fact, this combination of rational and non-rational attitudes in the study of religion is what Wilfred Cantwell Smith, one of the most influential scholars of Comparative Religion of our time, has termed "critical corporate self-consciousness",³⁵ that is, statements about the religions of others people must be rigorously critical as well as recognizable by the adherents of those religions.

The *Navavidhān* as a religious movement stood at the very beginning of the academic discipline of Comparative Religion in the nineteenth century. Most interestingly, one of the objects of the *Navavidhān*, a religious movement, was to "construct the Science of Religion by adopting the comparative method."³⁶ This explicit statement makes the *Navavidhān* a unique concept among all religions of the world. On the one hand, the comparative method involves "the religion of study, researches, criticism, thought and dialectics."³⁷ On the other, this historical-critical method of the West must be supplemented by Eastern mysticism: "Its eyes are naturally turned inward and they see vividly the spirit-world within."³⁸ This mysticism applied to the study of religion thus marks the *Navavidhān* as antedating the method in the academic study of religion known today as the phenomenological approach.

In his methodological considerations, Franz Damen, a Dutch historian of the *Navavidhān*, writes that "the historian's accurate description of patterns of religious concern does not constitute a complete study of the phenomenon of religion. It should be complemented by a phenomenological study...However, this phenomenological method proceeds primarily under direct intuitional approach....a phenomenological study on the same subject would, no doubt, greatly complement and enrich the present effort."³⁹

Wilfred Cantwell Smith has, in his numerous books and monographs, urged the integration of the researcher's consciousness with the object of study as far as possible. Smith

is an academician, but he goes a step beyond Damen. Damen hopes that his study will be a contribution to the “understanding of the faith of other men and women.”⁴⁰ Smith hopes that the academic study of religion will be “to expose one’s actual self to one’s potential self, and, through knowing something new, to become a new kind of person.”⁴¹ In circles of Comparative Religion, it is now being realized that the study of traditions other than one’s own involves both rational (critical) and non-rational (intuitional/mystical) faculties.

In conclusion, we may mention that Keshab Chandra Sen antedated the phenomenological approach in the academic study of religion of about fifty years, thereby again proving his creative genius. Comparative Religion as a *sāadhanā* of *Sādhū-samāgama* may be applied both in the academic study of religions, as well in the real world of religious intolerance and bigotry. If the leaders of the religions institute the *sāadhanā* of Comparative Religion among their adherents, we could well see the dawn of a new era in which the prophets and saints of all the religious traditions are owned and celebrated as the common possessions of all humanity. That would be the fruition of the *Navavidhān*.

Notes and References :

1. K.C. Sen, “Philosophy & Madness in Religion”, in *Lectures in India* (London, England: Cassell & Co., 1901), 284-85.
2. See Appendices 1-4 for major works by the scholars.
3. In 1980 *Haraf Prakashani*, a Calcutta publisher, brought out a centenary edition of Sen’s *Qur’ān*; its principal sales were in Muslim Bangladesh. The Bangladesh government acknowledges Girish Sen as a culture hero.
4. P.C. Mozoomdar, *The Life & Teachings of Keshub Chandra Sen* (Calcutta, India: Nababidhan Trust, 1931), 391-92.

5. One example of how religious currents criss-cross is that the above *Navavidhān* vow was adapted by Unitarian minister John Haynes Holmes as a reading of Affirmation and included in the Unitarian hymnal. See Reading #487, "Unto the Church Universal" in *Hymns For the Celebration of Life*, 14th Printing (Boston: Unitarian Universalist Association, 1983). The same vow forms the doxology of the Community Church of New York of which Haynes was a minister for many years. More recently, the vow was adapted to form the doxology of the North River Unitarian Church, Chicago, organized some time in 1987.
6. David Kopf, *The Brahmo Samaj & the Shaping of the Modern Indian Mind* (Princeton: Princeton University Press, 1979), 250.
7. M.M. Thomas, *The Acknowledged Christ of the Indian Renaissance* (London, England: SCM Press Ltd., 1969).
8. Kopf, 250-51.
9. Ibid.
10. Krishna Behary Sen, *Navavidhān Ki?* [What is the New Dispensation?] (Calcutta, India: People's Press, 1896).
11. K.C. Sen, *Lectures in India*, 53.
12. Schubert M. Ogden, *The Reality of God & Other Essays* (New York: Harper & Row, 1966), 158.
13. The first chapter of Mozoomdar's *The Faith & Progress of the Brahmo Samaj* (Calcutta, India: The Central Press Co., Ltd., 1882), "Difference Between Deism & The Brahmo Somaj", is an exposition of Brahmo theism, written expressly to refute accusations that Brahmoism was nothing other than deism.
14. P.C. Mozoomdar, *The Spirit of God* (Boston: George H. Ellis, 1894), 11-12.
15. Ibid., 10.
16. K.C. Sen, *Lectures in India*, 61.
17. Ibid., 67.
18. Mozoomdar, *Spirit of God*, 236.
19. This is the famous doctrine of incarnation expressed in the Bhagavad-Gītā, 4: 7-8.
20. K.B. Sen, *Navavidhān Ki?*, 27.
21. Mozoomdar, *Spirit of God*, 241.
22. Ibid., 284.
23. Ibid., 286.
24. Ibid., 287.

25. K.B. Sen, *Navavidhān Ki?*, 110.
26. An Indian custom.
27. Mozoomdar, *Spirit of God*, 15.
28. Ibid., 24.
29. Sati Kumar Chatterji, *Upādhyāya Gour Govind Roy* (Calcutta, India: n.p., n.d.), 13-14. The translation is mine.
30. Sati Kumar Chatterji, *Samanvaya Mārga* [The Path of Harmony] (Calcutta, India: M.C. Sarkar & Sons Pvt. Ltd., 1961), 70-71. The translation is mine.
31. The Brotherhood, *The Apostles & Missionaries of the Navavidhān* (Calcutta, India: The Brotherhood, 1923).
32. Chatterji, *Samanvaya Mārga*, 258.
33. Ibid., 259-60.
34. Mozoomdar, *The Oriental Christ*, 7, 13.
35. Wilfred Cantwell Smith, "Objectivity & the Humane Sciences" in Willard G. Oxtoby, ed. *Religious Diversity: Essays by Wilfred Cantwell Smith* (New York: Harper & Row, 1976), 162.
36. "Objects of the New Dispensation" in Keshub Chunder Sen, *The Navavidhān* [a collection of Keshab's writings in the *Navavidhān* (Calcutta, India: Brahmo Tract Society, 1915) 1:341.
37. "The New Dispensation—Its European Side," *ibid.*, 312.
38. "The New Dispensation—Its Asiatic Side," *ibid.*, 316.
39. Franz Damen, *Crisis & Religious Renewal in the Brahmo Samaj (1860-1884): A Documentary Study of the Emergence of the New Dispensation under Keshub Chandra Sen* (New Delhi, India: Department Orientalistiek Katholieke Universiteit, Leuven, Belgium, 1983), 13.
40. Ibid., 11.
41. Smith, 178.

APPENDIX-I

Works of Reverend Bhai Protap Chunder Mozoomdar

(Professor of Christianity in the Church of the New Dispensation)

The Faith & Progress of the Brahmo Somaj. Calcutta, India: The Central Press Co., Ltd., 1882.

The Oriental Christ. Boston: George H. Ellis, 1883.² 1884,³ 1893,⁴ 1894,⁵ 1990.

Sketches of a Tour Round the World. 2d ed. Calcutta, India: Navavidhan Publication Committee, 1940¹, 1884.

"Emerson As Seen From India," in F.B. Sanborn, ed. *The Genius & Character of Emerson: Lectures at the Concord School of Philosophy.* James R. Osgood, 1884; reprinted Boston & New York: Houghton, Mifflin & Co., 1898.

The Life & Teachings of Keshub Chunder Sen. 3d ed. Calcutta, India: Nababidhān Trust, 1931. ¹1887.

Stri-caritra: Strijātiya unnatibishayaka upadesa evam dr̥ṣṭānta [Character of Women: Advice & Examples regarding Conduct of Life of Women]. 3d (revised & enlarged) ed. Calcutta, India: Navavidhan Publication Committee, 1936. ¹1890-91.

Aids to Moral Character: A Manual of Precepts, Quotations, Anecdotes & Examples, 2d ed. Calcutta, India: S.K. Lahiri & Co., 1990. ¹1891.

The Spirit of God. Boston: George H. Ellis, 1894.

Heart-Beats. Boston: George H. Ellis, 1894.

The Silent Pastor: Words, Precepts & Experiences of Spiritual Life. Calcutta, India: The Bengal Press, 1899.

Ashish (Kritagwata, Prarthana O Atma Alochana) [Benedictions (Gratitude, Prayers & Introspection)]. 3d ed. Calcutta, India: Navavidhan Publication Committee, 1964. ¹1905.

Upadesa [Sermons]. 4 vols. Calcutta, India, 1919-68.

Lectures in America & Other Papers. Calcutta: Navavidhan Publication Committee, 1955.

APPENDIX-2

Major Works of Upadhyaya Bhai Gour Govind Roy (1841-1912)

(Professor of Hinduism in the Church of the New Dispensation)

Hindudharma-vijñāna [Hinduism]. New Edition. Calcutta, India: Navavidhan Publication Committee, 1963. [238 pp.]

Srimadbhagavad-gītā Samanavayabhāṣya [Commentary in Sanskrit & Bengali on the Bhagavad-gītā, showing that the philosophical Gītā is in harmony with

the mythological Mahabharata]. 2d ed. Calcutta, India: Navavidhan Press, 1940. [688pp].

Srīmadgītāprapūrti [Commentary on the Bhagavad-gita]. [594pp.] Publication details not available to me. [Sanskrit text in Bengali characters with Bengali translation and commentary].

Vedānta Samanvyabhāṣya [Reconciliation of the philosophical systems of the Vedānta]. Calcutta, India: Mangalgañj Mission Press, 1912.

Srīkṛiṣṇacaitanya Eban Tanhara Svabhavanistha Yoga [Life of Caitanya & His Natural State of Communion]. 2d ed. Calcutta, India: Navavidhan Publication Committee, Bharatavarshiya Brahma Mandir, 1960. [203pp.] [Critical interpretation of Caitanya].

Dharmatattva: Bibeka O Buddhira Kathopakathana [Spiritual Wisdom: Conversation Between Conscience & Intellect]. 2 Vols. in 1. Calcutta, India: Mangalgañj Mission Press, 1914/15-1936/37.

Acarya Keshabchandra [Biography of Keshub Chunder Sen]. Centenary Edition, Allahabad Series, 3 vols. Calcutta, India: Navavidhan Press, 1938. [2, 302pp.]

Bauddhadharma Prasāṅga [On Buddhism]. Calcutta, India: Navavidhan Publication Committee, Bharatavarshiya Brahma Mandir, 1958. [57pp.]

Upadhyayer Bakṛta: Sampurna [Complete addresses of Gour Govind Roy]. Pamphlet Collection of addresses between 1889 and 1907. Calcutta, India: n.p., 1916. [497pp.] [Critical interpretation of Keshub Chunder Sen].

Prerita Kālīśankara Dasa Kabiraja [Life of Apostle Kali Sankar Das (1837-89)]. Calcutta, India: Navavidhan Mission Office, 1902. [195pp.].

Gour Govind Roy, ed. Sasibhusan Talukdar, *Pabitra Navavidhan-bhīta Brahmopasana*. [Divine Workshop According to the New Dispensation, by Sasibhusan Talukdar]. Calcutta, India: Gupta, Mukherjee, 1901/02. [52pp].

Sources: Regenstein Library, University of Chicago; Kopf, The Brahma Samaj, 380.

APPENDIX-3

Major Works of Sadhu Aghore Nath Gupta (1841-81)

(Professor of Buddhism in the Church of the New Dispensation)

Śākyamuni-carit O Nirvāṇa-tattva [Life of Buddha & Philosophy of Nirvana]. Introduction by Gour Govind Roy. Calcutta, India: Publisher? 1881-83 [254pp].

Pratyadeśu Antare [Inspiration is within the Self]. Publication details not available; not available to me.

Dhruba O Prahlāda [Figures of Hindu mythology, examples of single-minded quest for God]. Publication details not available to me.

Debar̥shi Narada [The Divine Sage Narada]. Publication details not available to me. [Narada is a Hindu mythological figure, an intellectual who mastered the four *Vedas*, the *Rāmāyaṇa* and the *Mahābhārata*. But all this learning did not satisfy his soul. So he went to Viṣṇu with his complaint. Viṣṇu told him that he had acquired learning (*jñāna*) but lacked devotion (*bhakti*). So he gave Narada the boon of *bhakti*. Narada's soul was filled with bliss and he composed the great devotional text known as the *Nārada Bhakti Sūtra*].

Bhaktamāla [Lives of Hindu devotional saints]. Publication details not available to me.

Dharma Sopān [Sermons delivered in Dacca and Mymensingh, [Bangladesh]]. Publication details not available to me.

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APPENDIX-4

Major Works of Moulvi Bhāl Girish Chunder Sen (Professor of Islam in the Church of the New Dispensation)

Kor-an Sharif/Girishchandra Sen kart̥ka mūla Kor-an sarifa haite anubādita, bhinna bhinna prasiddha tafsira abalambane tikā likhita [Qur'an Sharif. Translation into Bengali from the original Qur'an, with commentaries from authoritative sources]. 4th ed. Calcutta: Navavidhān Publication Committee, 1936. [720pp].

Mahāpuruṣa Mohammad O Tatpravartita Eslāma Dharma: arthat mahāpurush Mohamadera samkshipta jibani eban Kor-ān, Hādise o katipaya prāmāṇika dharmetihasa grantha haite samkalita, tadiya dharmera sarasamgraha ebam samālocanā [Prophet Mohammed & His Revelation of Islam: or a short life of Prophet Mohammed & the Essence of Islam, Critically Studied. Extracted from the Qur'an, Hadith and some Authoritative Source]. 2d ed. Calcutta: K.P. Nath, 1917 [100pp] [Title page in English, "Mohammad & His Religion"].

Tāpasamālā: arthāt Mosalmāna tapasvidigera jibanbr̥ttānta: Parasyapustaka Tejekarot Auliaya haite samkalita o mūla haite Banglaye Anubādita [Garland of Saints, or Lives of Muslim Saints: Compiled & Translated into Bengali from the Original Persian *Tazkirat al-awliya* or Farid al-Din Attar]. 6 vols. in 1. 10th ed. Calcutta: Navavidhan Publication Committee, 1950-53.

Darbesi, arthat, Musalmana sadhkdigera bairagyatattwa O Sadhanpranalira viśeṣa vivaraṇa: Parasya bhasaya likhita Kimiyayasadata prabhriti Mohammadiya dharmasastra haite samkalita [The Dervishes, or Philosophy of

Asceticism & Spiritual Disciplines of Muslim Saints: compiled from Islamic texts in the Persain language]. 4th ed. Calcutta: Navavidhan Press, 1933/34. [69pp].

Tattva-ratnamālā: arthat tattvasastrasambandhiya racanābali Parasya pustake Mantekottayaro O Masnabi Maulavi Roma haite samkalita [Pearls of Wisdom: A compilation from the Persian *Mantiq al-tayr* & *Masnavi* of Jālāl al-Dīn Rumi]. 3d ed. Calcutta: Mongalganj Mission Press, 1913/14.

Atma-jībanī: arthat Bhāi Girish Chandra Sen Kartrka bibrata ātma-jībanbṛttānta [Autobiography of Girish Chunder Sen]. Calcutta: Gupta, Mukherjee [1906/07]. [146pp].

Girish Chunder Sen, intro. *Bisvasi sadhaka Girindranath Raya* [Life of Disciple Girindranath Roy]. Calcutta: K.P. Nath, n.d. [80pp].

Srimat Ramakrishna Paramahansera Ukti O Samkshipta jībana [Life & Teachings of Sri Ramakrishna]. 5th ed. Calcutta: Navavidhan Publication Committee, 1949/50. [61+21 pp] [This is the first book on the life and teachings of Sri Ramkrishna].

Tattvasandharbamālā: bidhāntattva [Religious Thought: The Philosophy of Dispensations]. 2d ed. Calcutta: Mangalang Mission Press, 1915.

Source: *Regenstein Library, University of Chicago*.

APPENDIX-5

Major Works of Sangeetacarya Bhāi Trollokya Nath Sanyal (1840-1916)
(Professor of Music & Poetics in the Church of the New Dispensation)

Cīranjiba-saṅgitābali [Hymns of T.N. Sanyal]. Calcutta, India: Navavidhan Press, 1934 [442pp.]

Gitaratnabali [Hymns of T.N. Sanyal]. 4 vols. in 1. Calcutta, India: Victoria Press, 1885-1900.

Pathera Sambala [Staff of Life: Songs, Poems and Prayers]. Part-I. Calcutta, India: Empire Library, 1910/11.

Yauvanasakhā [Friend of My Youth: Poems]. Part-I Calcutta, India: Mangalganj Mission Press, 1886/87.

Bidhan-bharat, arthat, yugadharmamahatmyupratipadaka Harilā mahākābya [The India of Dispensations, or the Great Peom of the Divine Sport Revealed in the Dispensation of the Age]. In verse. 2 vols. in 1. Calcutta, India: Indian Mirror Press, 1879/80.

Virṣa śatābdi: Āśā-kābya [The Twentieth Century: Poem of Hope]. 2 vols. in 1, Calcutta, India: M.M. Rakshita, 1891. [329pp.]

Nababrinḍāban: arthāt, dharmasamanvaya natak [The New Vrindavan (mythological birthplace of Kṛiṣṇa, the Paradise of Hindus), or Drama on Harmony of Religions]. 3d ed. Coochbehar, India: Coochbehar Royal Government Press, 1904/05. [120pp].

Yugala milana, arthāt, Dampatya prema nāṭaka [Union of Husband and Wife, or, Drama of Conjugal Love]. Calcutta, India: Victoria Press, 1886? [75pp].

Kalisāūhāra Nāṭaka [A Drama on Victory over the Present (*kalī*) Age]. Calcutta, India: Nutan Arya Yantra, 1884. [67pp].

Bhakticaitanyacandrikā: arthat, Caitanyera Jīban O Dharma [Life & Teachings of Sri Caitanya]. 4th ed. Calcutta, India: Victoria Press, 1890. [246pp].

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Appeal of Upaniṣads in the Modern Age of Science

Swami Atmapriyananda*

‘May my limbs wax strong. May my speech, vital force, eyes, ears, strength and all the senses also increase in power. The *Brahman* expounded in the Upanishads is the all in all. May I never deny *Brahman* nor *Brahman* ever deny me. Let there be non-denial [of *Brahman*]; let there be non-denial on my part [of *Brahman*]. May the virtues proclaimed in the Upaniṣads reside in me, who am devoted to the *Ātman*; may these virtues reside in me. Om Peace, Peace, Peace.’¹

Our subject this evening is ‘Appeal of Upaniṣads in the Modern Age of Science’. I would try to present the eternal message enshrined in the ancient wisdom, which is the Upaniṣads, vis-a-vis the revolutionary thought currents that have been sweeping over today’s world during the century gone by and at the turn of the new century. This would help us understand the eternal appeal the Upaniṣads exercise on the human mind today, and how the modern world thought is re-echoing the Upaniṣadic wisdom in modern and scientific language.

I

Revolutionary Changes in World Thought During the Last Century

Since the beginning of the last century, during last the one hundred years, that is, world thought has undergone certain sweeping changes. We may broadly classify them into four categories:

in the field of physics, that is, the science of matter,

in the realm of bio-science/biotechnology, that is, the science of life,

in the domain of psychology, that is, the science of mind,

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in the sphere of communication—computer science/engineering, leading to the search for Artificial Intelligence (AI)

Revolutions in the Field of Physics, the Science of Matter

Revolutionary thoughts that completely altered man's conception of the physical world were first conceived at the very beginning of the twentieth century by Albert Einstein. In 1905, he propounded his famous theory of Special Relativity, which revolutionized our conception of space and time. This threw open a hitherto-unknown, and therefore unconventional, world view—*Weltanschauung*—whose scientific and philosophical implications are profound. That Nature does not have any preferential frame of reference, which means that all physical laws remain the same irrespective of the frame of reference used, is Einstein's famous discovery—the relativity principle—which has given us a new understanding of Nature. One implication of this principle, philosophically speaking, is that Nature is impartial, for it chooses to treat all the frames of reference on the same footing. The my-frame-versus-your-frame quarrel, the root of all fanaticism and bigotry, was set at rest, once and for all, by this scientific discovery, applied to philosophy and religion. Swami Vivekananda spoke about this in his famous address at the Parliament of Religions in Chicago in 1893, a decade before Einstein's enunciation of the relativity theory. Vivekananda called for the eradication of fanaticism and bigotry from the human heart. This call was echoed in scientific terms by Einstein, who proved that preferential attachment to one particular frame of reference—a framework of thought, in philosophical terms—is against Nature's scheme of things, for Nature treats all frames alike, on the same footing. The sameness—*sāmya* or *śamatva* in Vedantic parlance—is a fundamental principle of Nature, whose violation leads to the undesirable feelings of fanaticism, bigotry, hatred and attraction/repulsion. The theory of Special Relativity was followed up by Einstein by the theory of General Relativity in 1925, in which he gave a very different interpretation of gravitation. Our concept of space, time and matter thus underwent

a revolution. We were taught that the space that we see has a very special characteristic: it is 'curved' and, what is more interesting, its 'curvature' is influenced by the presence of matter. Thus space, time and matter are not to be considered as three distinct entities, but deeply intertwined with one another. It is not that matter is in space-time, but matter itself, in a sense, is space-time. Einstein was once asked to define the relativity theory in a few words. He said: 'Earlier, physicists thought that if all matter vanishes from the universe, space and time alone would remain; but the relativity theory has proved that space and time would also vanish with matter!' It is this continuum that brought about sweeping changes in our world view, *Weltanschauung*.

In parallel with Einstein's relativity theory came Max Planck's famous Quantum Theory, enunciated in 1900, whose centenary is now being celebrated all over the world. The tiny quantum—ubiquitous and powerful—began to dominate all science, not to speak of physics! Planck said that the emission and absorption of radiation takes place not in a continuous fashion, but in discrete bundles of energy, called quanta. Each quantum is a 'bundle of energy', and the energy content of a quantum is proportional to the frequency of radiation. Here we see how the particle concept, namely the discrete energy-bundle—the quantum concept—gets happily wedded to the wave concept, frequency being a typically wave concept. This was the beginning of the intermingling of the wave and particle concepts—that radiation takes place in terms of quanta. The quanta of electromagnetic radiation came to be known as photons, which soon came to be recognized as fundamental particles in particle physics, with specific characteristics.

When the correctness of Planck's quantum theory soon became a proven fact, thanks to its successful application in several phenomena, particularly in the atomic realm, a very strange idea was thrown up by de Broglie. Once again, the motivation for de Broglie's idea came from the philosophical world view of Nature already spoken about, namely, that Nature is impartial because it is symmetric. That Nature is symmetric and impartial is what

makes it beautiful. The Sanskrit words corresponding to these concepts are, respectively, *shivam* and *sundaram*. It is well known in Indian spiritual thought that Truth (*satyam*) ought to be auspicious, just, impartial, fair, impersonal (*shivam*), and beautiful (*sundaram*). It is a simple fact that beauty is directly related to symmetry, for it is symmetry that engenders beauty. Further, there is a well-known theorem in physics, called Noether's Theorem, which states that it is symmetry that gives rise to conservation. Conservation laws are fundamental to physics, and in fact to all science, including perhaps social sciences like economics, political science and sociology. And the statement is that these conservation laws are a direct consequence of symmetry principles.

We thus see how the philosophical ideas of Vedānta in particular, and Indian spiritual thought in general, have found an echo in physics and have exerted an unknown influence in shaping the world view emerging from the New Physics in the twentieth century. It would be too naive to claim that Indian thought has influenced these revolutionary discoveries in physics; what actually happens is that, as Swami Vivekananda pointed out, when certain fundamental ideas are conceived by great minds, these remain as a part of the Cosmic Mind—called *Hiranyagarbha* in Vedānta—and every mind being an integral part of the Cosmic Mind, becomes vulnerable and sensitive to these cosmic vibrations of thought. Thus the sensitive minds of these great physicists—an Einstein or a Planck or a de Broglie—'catch' these vibrations in the Cosmic Mind and with their training and education in physics, formulate the laws, principles and theories which now bear their name. This discovery of the *Hiranyagarbha* is one outstanding feat of the Upaniṣadic rishis—one of the 'very bold generalizations', in the words of Swami Vivekananda. It may be of interest to mention in this connection the joint research venture by Pauli, that genius of a physicist of the last century, and Jung, the famous psychologist and a contemporary of Pauli, in which they were trying to formulate a very generalized concept like the Cosmic Mind or the *Hiranyagarbha*. Unfortunately, their research in this



direction is little known and has been left unpursued by later researchers. The Upanishadic echo is too loud in this attempt to be ignored.

De Broglie, then, came up with his startling discovery of the matter-waves in 1924-25. What belief—*śraddhā* is the Upaniṣadic word—in the symmetry and impartiality of Nature, de Broglie argued as follows: If, according to Planck's quantum hypothesis, radiation can have particle (quantum or photon) characteristics, then, by symmetry, a particle should also be endowed with wave characteristics. The two fundamental manifestations of Nature, namely, radiation and matter, should be treated on an equal footing, there being no partial treatment in Nature's symmetric scheme, and therefore wave characteristics of matter (particle) should follow as a natural consequence of particle characteristics of radiation (waves). He thus came up with his startling discovery—this should have been considered a 'mad' proposition when de Broglie first propounded it!—of the matter-wave. What these waves are, what their nature is, how they are to be interpreted in physical terms and a host of other questions immediately came up, and the answers to these questions from part of what is now known as the Wave Mechanics of Schrödinger, with its more abstract and general-formalistic counterpart, Quantum Mechanics of Heisenberg.

Heisenberg's general formalism of Quantum Mechanics, and more particularly, his famous Uncertainty (or Indeterminacy) Principle has very profound philosophical implications. Is Nature probabilistic or is it deterministic? One finds here an echo of the free will-versus-predetermination debate in philosophy. Conditioned as he was by his own religio-philosophical conceptions, Einstein could not till the end of his his life accept the probabilistic interpretation of Quantum Mechanics. He argued that it is the inability of the limited human mind to be able to comprehend certain 'hidden variables' in Nature that leads him to say that Nature is probabilistic at the micro (atomic/sub-atomic) level. There was a famous debate between Einstein and Bohr: Einstein said, 'I can't believe that God plays dice; he certainly

knows what he is doing and going to do'. In reply, Bohr quipped, 'But you can't dictate to God what he should do'. 'Recall Sri Ramakrishna's simple statement: 'The Divine Mother is *icchāmayī* (self-willed); how can you say what She should do at what time?' When the probabilistic interpretation came to stay, however, Einstein still found it unacceptable and spent the last part of his life like a recluse, cut off from the advances in contemporary physics, searching for something he could not find!

The story of Einstein's search for a Unified Field Theory, which never ended during his lifetime, is a fascinating chapter in the history of physics. Having propounded his Special Theory and General Theory of Relativity and having become frustrated with the probabilistic interpretation of Quantum Mechanics, to which he could not find an alternative, Einstein spent his life in quest of the Unified Field Theory, the Holy Grail that eluded him till the end. The motivation for the search is itself illuminating and remarkable. Swami Vivekananda said in his lectures on *jñāna yoga* that the human mind always looks for generalization; it goes from the particular to the general, from the general to the more general and so on, till it reaches the most general—Oneness. When that is reached, all search comes to an end, for in that consummation of the quest, 'peace that passeth understanding' is reached, culminating in the attainment of supreme Oneness—*śāntam*, *śivam*, *advaitam* in the language of the *Māṇḍukya Upaniṣad*. Swami Vivekananda pointed out how the Upaniṣadic rishis made some bold generalizations, and saw the particulars as manifestations of those generalizations. By the turn of the last century, physicists were investigating into and researching with Supersymmetry, Grand Unification Theories (GUTs) and so on. Salam and Weinberg got the Nobel Prize for the unification of three of the four fundamental interactions—forces of Nature: the electromagnetic, weak and strong forces; the gravitational force is still eluding our grasp. Physicists are trying hard to bring that too under their unification scheme, as also to integrate quantum theory with gravitation—the microcosmic manifestation with the

macrocosmic one through their quantum gravity theories. The hope, ultimately, is to discover a Theory of Everything (ToE). Do we not get here a clear and loud echo, in unambiguous language, of the Upaniṣadic enquiry: *Kasminnu bhagavo vijñāte sarvamidāṁ vijñātam bhavati?*, “Sir, what is it, by knowing which everything can be known?”² There have been speculations of late by some physicists that the ToE cannot be found at all, for no such theory really exists. But our ancient wisdom, enshrined in the Upaniṣads, clearly stated that it is possible to know that by knowing which everything else becomes known. But then, for this discovery to be possible, one should go beyond the level of matter and enter into the realm of pure Consciousness, absolute Awareness, of *Caitanya*.

Revolutions in the Realm of Bio-science, the Science of Life

The last century saw some sweeping changes in the Science of Life. Interestingly, the pioneers, the founding fathers, of Quantum Mechanics were deeply interested in the question of Life: Schrödinger, the father of Wave Mechanics, wrote a book *What is Life?* Physics and bio-science were getting closer to each other and newer branches were getting developed: biophysics, biochemistry, biotechnology, biomedical engineering and so on. These revolutionary discoveries in the realm of life sciences during the last century, which began with the structure of the DNA, reached at the turn of this new century a point where the decoding of the genetic code has become possible and a reality. Around the middle of the last century, hectic research activity was going on in the study of the DNA structure, and the final breakthrough came in 1953 through the researches of a British biophysicist, Francis Crick, and an American geneticist, James Watson. They suggested that DNA structure was a double helix—a conclusion they reached after studying X-ray photographs taken by the British X-ray crystallographer, Rosalind Franklin (1920-58). She used X-rays to look at DNA crystals. Crick, Watson and Maurice Wilkins (born 1916) got the Nobel Prize for Physiology or Medicine in 1962. Franklin died before her contribution was properly credited. The

basic rules of genetics were, however, worked out long ago, during the nineteenth century, by one Gregor Mendel (1822-84), an Austrian priest and botanist who discovered how characteristics were inherited. He found out that inheritance does not work by blending characteristics together, as people then thought. Instead, they are inherited in pairs. In each pair, only one characteristic is usually expressed (shown). Although Mendel had worked out the basic rules of genetics much earlier, it was not until the twentieth century that scientists rediscovered and re-substantiated his work.

It is now common knowledge that every form of life, from an elephant to an alga, is put together and controlled by a chemical recipe. Instead of being written down, this recipe is in the form of a chemical code. The code is contained in helical (spiral-shaped) molecules of deoxyribonucleic acid (DNA), which are packed away inside the cells of all living things. The chemical code is very complex. The code inside one human cell contains fifty thousand to a hundred thousand separate instructions, called genes, and each gene controls a different characteristic. Genetics is the study of the way inherited characteristics are passed on. Genetic engineering is the technology by which one could manipulate the genes, thereby altering the inherited characteristics at the microcosmic level. In a cell's nucleus, there are several lengths of DNA. Each one is called a chromosome. A gene is one area of a chromosome that has the instructions to make one protein. DNA works by telling a cell how to make the many different proteins that our cells need to work. To do this, a part of the DNA helix is temporarily 'unzipped', so that its code can be copied. The copy moves out of the nucleus. Once outside, it instructs the cell to assemble a particular protein, which could be an enzyme or a collagen (a skin protein), for example.

Just by the turn of this century, as we were entering the new millennium, there were reports from British as well as American groups of biophysicists and biotechnologists that they had successfully decoded the genetic code. They were thus claiming

that human beings have, for the first time, access to the 'mind of God', a challenge the now famous astrophysicist Stephen Hawking has asked the physical scientists to take up in a different context. The bio-scientists hence lay claim to the discovery of the language of God—the *brahma-lipi* in the language of our ancient scriptures.

Revolutionary Discoveries in the Realm of Psychology, the Science of the Mind

The principles of Sigmund Freud's psychoanalysis, discovered and enunciated by him at the turn of the last century, around 1900, and developed by him in later years, set in motion revolutionary changes in our conception of the human mind and its functioning at deeper layers. These developments made psychology an independent and fascinating branch of study. Freud's theories of the unconscious, of the libido, funnelled through a personality structure of id, ego and superego, his concepts of eros and thanatos, of free association, of transference as methods of psychiatric treatment and so on are now well known. Later modifications of Freud's theories and concepts by Alfred Adler and Carl G Jung, who rejected some of the Freudian concepts like excessive emphasis on the libido, identification of the libido with the sex-instinct and so on, opened up newer dimensions in psycho-analytical research. Adler developed his own school of psychology called 'Individual Psychology' or 'Ego Psychology', while Jung developed his school of 'Analytical Psychology'. Jung expanded and modified the Freudian concept of libido to mean and represent the whole of psychic energy and the unconscious as the storehouse of all our psychic energy and power. Jung's concept of Collective Unconscious which includes 'archetypes' that provide the religious symbols and myths of different cultures, his concept of polarities in the unconscious, namely, the persona and the shadow, the anima and the animus and so on made our understanding of the human mind, the science of psychology, wider and deeper. As the development of the various concepts of psychoanalysis progressed over the years, newer ideas emerged, essentially by the galvanization and interaction of these concepts constituting what

is now known as the 'Third Force' in psychology. It is sometimes called 'Humanistic Psychology', some of the prominent members of this school being Karen Horney, Carl Rogers, Abraham Maslow and Eric Fromm.

Almost parallel to the psychoanalytical tradition, two other schools of psychology also developed mostly in academic circles. These are behaviourism in America and gestalt in Germany. Some of the prominent names associated with behaviourist school are John B. Watson, B.F. Skinner and Walter S. Hunter, who reduced consciousness to a purely nervous phenomenon of 'stimulus and response', denying an independent existence of the mind apart from the brain. Many of the microbiologists also appear to hold this view about the mind. Gestalt Psychology developed in Germany with the researches of Wertheimer, Koffka and Köhler, who held that perception and other mental activities take place not as the coordination of a series of analytical processes but as integral wholes.

A third school of psychology parallel to the analytical tradition, known as Hormic Psychology, was founded in Great Britain by William McDougall around the beginning of the last century. This school in the introduction of will, which was conceived more or less as an instinct.

Yet another school of psychology was founded by some psychologists under the influence of the philosophy of existentialism. One of its leading exponents is Roll May, who develops the essential ideas of this school in this book *Psychology and the Human Dilemma*.

Viktor Frankl emphasized that a human being's primary concern is the 'search for meaning', rather than the satisfaction of biological needs. Though not constituting a separate school of psychology, Frankl's ideas have considerably influenced several thinkers in the science of psychology.

The brief survey presented above gives a bird's-eye view of the vast amount of research and thinking that have gone into the understanding of the human mind in depth.

Revolutionary Ideas in the Field of Computer Science and Engineering/Information Technology, Leading to Speculations about Artificial Intelligence

Over the past few decades, thanks to the enormous strides made by electronic computer technology, attempts at computer simulation of human intelligence are being made in a big way. This area of lively controversy that has been arousing tremendous interest in recent years is referred to as Artificial Intelligence (AI). There is a point of view, referred to as strong AI, which asserts that mental qualities of some sort could be attributed to the logical functioning of any computational device, even the simplest ones, what to speak of sophisticated ones like the computers. Computer science and engineering and information technology are still very young disciplines. Supercomputers are being developed; as years pass by, these devices will get faster and faster, will have larger and larger rapidaccess memory stores, more and more logical units and will be able to perform larger and larger operations in parallel. All this is actually happening now, and that at a staggering speed. The idea behind strong AI is that mental activity is simply the carrying out of some well-defined sequence of operations via a specified calculational procedure, frequently referred to as an algorithm. AI protagonists believe that by developing powerful devices to execute these algorithms, computer simulation of human intelligence is possible.

Exciting and highly controversial research is going on in this field of intelligence, a revolutionary development at this turn of the present century. Scientists (physicists, bio-technologists, computer engineers, artificial intelligence people) are now asking certain fundamental questions about consciousness, like 'What does consciousness mean? What is intelligence? What is awareness? Is the universe we see, perceive and live in, seal-aware? What is the relation between consciousness and the brain?' In a word, consciousness research seems to be engaging the minds of scientists and thinking men and women all over the world.

Self-awareness appears to be a wonderful phenomenon in this

consciousness research study. There is a funny story with which Roger Penrose's famous book *Emperor's New Mind* begins. The title of this book, as one can easily see, is a parody of the well-known story of the emperor's new clothes: how the nudity of the mighty and all-powerful emperor was exposed by the unsophisticated simplicity of an innocent little child! This parody of the story of the emperor's new clothes is about the emperor's new mind: how the mighty power and near-omniscience of a super-super computer was exposed as hollow snobbishness by a little boy, watching the inaugural ceremony where the mighty computer's great powers were being displayed.

The story is as follows: A super-super computer is created by a scientist, an AI protagonist. This near-omniscient machine is to display its might and genius at an inaugural ceremony where important dignitaries are present: scientists and technologists of all disciplines, political leaders, men of importance from all walks of life. The claim is that this super-super computer can, within micro-micro-or nanoseconds, answer any question that might be put to it.

At the inaugural ceremony, the President, the head of the whole country, gently requests anybody present in the audience to put the first question by way of inauguration. Everybody is keeping quiet—all the great stalwarts among the scientists and engineers remaining silent and holding their breath, lest they appeared silly and stupid before such an amazing omniscience, by asking a question. A little boy gets up, puts up his hand, and says, 'Sir, may I have the privilege of asking the first question?' 'Yes, come on, says the President.' 'Go ahead, boy, it is your privilege to ask the first question.' The boy mutters in utter innocence: 'How does it feel to be a computer?' The computer activates, the various lights start glowing; seconds pass, minutes pass and almost an hour passes. There is no answer. The entire audience looks on flabbergasted, dumbfounded, confounded and nonplussed. There is a stunning silence all around. After a couple of hours of computation, the computer blinks and gives the message: 'I don't know'. There is uproar, hilarious laughter everywhere, and a

curious joy at the performance of this 'God that failed', derision at this ignoramus parading its wanton 'omniscience'!

The computer fails to answer a simple question, namely, how it *feels* to be a computer itself, because it is an 'unintelligent omniscience', capable of making very 'intelligent' computations at fantastic speed; much faster than an intelligent human being. Notice here the meaning of the word *intelligent* in regard to a human person and a computer. A human being is intelligent in the sense that he is self-aware. A computer is 'intelligent', in the sense of being capable of highly 'intelligent' computations, being itself absolutely 'unintelligent', that is, not self-aware. This 'unintelligent omniscience' is made to do all the bullwork by the 'little' intelligence of a human being, and it is doing things that he could never hope to do in a lifetime! But the 'little intelligence' of the human being has given birth to this fantastic 'unintelligent genius'! That is the paradox and the glory of Consciousness, the conscious Principle, *caitanya* as the Upaniṣads would call it.

Upaniṣadic Analysis of the Layers of a Human Personality vis-à-vis the Revolutions in the Thought Currents as Mentioned

The four main trends of thought mentioned above—the revolutionary changes in the thought current of the world during the last century and beginning of the present century—apparently look unconnected, or at the most running parallel, with hardly any meeting point. The physical, the biological, the psychic and the intellectual—how are they related to one another? Or, are they related at all? The human mind, as we have said, always looks for interrelationship, interconnectendness, unification and integration. There are attempts today to pursue what is known as 'inter-disciplinary' research. Most interestingly, in attempting this so-called inter-disciplinary approach, we have never asked whether these disciplines were separate at all at any time that an interrelationship is attempted to be discovered through inter-disciplinary approach? In India, the various disciplines, the branches of knowledge, were never separate from one another, all

of them being classified under *aparā vidyā*.³ In seeking the interrelation between these four, the physical, the biological, the psychic and the intellectual, we should seek how they are related to the individual, the person, the 'I', for whom they are intended in the first place. Without the 'I', the person, the conscious Principle, these disciplines have no meaning whatsoever.

The Upaniṣads have analysed the human personality into five layers or levels. Each layer is to be considered an autonomous self, governed and regulated by its own laws. Popularly, this scheme is known as *pañca-koṣa-viśleṣaṇa*, analysis of the five sheaths; but then the word *koṣa*, or sheath, does not occur in the original text, the second chapter of the *Taittirīya Upaniṣad*. Commenting on this text, Śaṅkarācārya introduced the concept of *koṣa*, or sheath, to suit his Advaitic philosophy. So, going by the original text of the Upaniṣad, we may seek the correspondence of the four disciplines mentioned above with the hierarchy of the following four layers of human personality: 1. the physical (*annamaya-ātman*) 2. the biological (*prāṇamaya-ātman*), 3. the psychical (*manomaya-ātman*), and 4. the intellectual (*vijñānamaya ātman*).

The *Taittirīya Upaniṣad* speaks of Bhṛgu, the son of Varuṇa, approaching his father with the following prayer: 'Adhīhi bhagavo brahmeti. Sir, teach me Brahman.'⁴ Varuṇa says, 'Yato vā imāni bhūtāni jāyante: yena jātāni jīvanti; yatprayantya bhisamviśantīti; tadvijijñāsasva; tadbrahmeti. Know That from which all beings originate, emerge; that in which all beings rest; and That into which all beings finally merge—That is *Brahman*.' (3.1.1)

He also instructs his son about the *sādhana*, the method or process by which this realization of *Brahman* could be achieved: 'Tapasā brahma vijijñāsasva; tapo brahmeti. Know Brahman by means of *tapas*; that is, by means of penance, austerity, mediation and control of the senses. *Tapas* is *Brahman*.' (3.2.1) A wonderful definition of *tapas* is given in the *Mahābhārata*, which Śaṅkarācārya quotes often in his commentaries on the Upaniṣads: 'Manasaśca indriyāṇāṃ ca aikāgryaṃ paramaṃ tapaḥ. *Tapas* is the concentrated focusing of the mind and all the senses (on the

object of *tapas*, which is the Reality, or Truth).⁵ Only by an absolute control over the senses and the mind, and a concentrated, intense and passionate enquiry into the Reality, can one hope to realize the Truth: '*Āvṛttacakṣuramṛtatvam icchan'*', as the *Kaṭha Upaniṣad* would say,⁶ that is, anyone who desires to attain Immortality (*amṛtatva*), must be *āvṛttacakṣu* (senses and mind turned inward and focused on the Reality within). Note that the *Upaniṣad* says that '*Tapas is Brahman, Tapo brahmeti*'. By saying that the goal is *Brahman* and the means (*tapas*) is also *Brahman*, the *Upaniṣad* indicates that in the ultimate Realization, the goal and the means coalesce into one. Having been instructed thus, Bhṛgu performs *tapas*, meditates. He then realizes the Truth, or *Brahman*, as physical, *annamaya*, for it is matter that pervades everything and is present everywhere; it is the physical universe that we perceive through our senses.

He then approaches his father again and tells him of his realization of *Brahman* as *annamaya*. The teacher does not say yes or no, does not give him the final answer, but encourages him to struggle further and to discover for himself the deeper layers of his self. The teacher says: 'Good, go on'. '*Tapasā brahma vijijñāsasva: tapo brahmeti*. Know Brahman through *tapas* (meditation, austerity, penance); *tapas* is *Brahman*.' Bhṛgu again goes back to do further *tapas*. Having performed *tapas*, having meditated, having investigated into himself, Bhṛgu realizes *Brahman* as *prāṇamaya*, as life-force. He feels that the Reality cannot be just matter; for the whole universe is vibrating, animated, as it were, with life, *prāṇa*. This principle of universal animation, this life-force vibrating through and through, is the *prāṇamaya*.

With this realization, he approaches the teacher once again and prays to be taught. With his characteristic style of propelling the student to further investigation, Varuṇa once again tells him: 'Good, go on. Meditate, do *tapas* and know *Brahman*.' This is the *Upaniṣadic* technique: the answer is not directly given to the student, for, then, he would never learn. The disciple should be taught the joy of struggle, the perseverance to investigate, to probe

deeper and deeper into himself, until he comes face to face with Truth. The teacher just plays the catalyst and gently, but effectively, persuades the disciple to investigate into himself, to go deeper and deeper till he realizes the Truth for himself. Thus, on and on Bhṛgu proceeds into the investigation of the nature of *Brahman*. He realizes *Brahman* next as *manomaya*—the mental. He feels that the entire universe is only thought, *bhāvamaya*. The objects that we see and feel are also nothing but thoughts.

Again the teacher sends him back for further investigation, more vigorous *tapas*. Having meditated, having performed more profound *tapas*, Bhṛgu realizes the Truth as *vijñānamaya*—the intellectual. Bhṛgu comes closer and closer to the Truth, to the ultimate Consciousness. Life and Consciousness are not the same in Upaniṣadic parlance. The discovery of Consciousness as different from Life, enunciated by our Upaniṣadic ṛṣis, is fundamental to Vedantic wisdom. Consciousness is at a much more profound layer than Life. And lastly, Bhṛgu realizes the Truth as *ānandamaya*—the blissful. He then feels that there is absolute, infinite Joy, and nothing but Joy pervading the universe.

This section of the *Taittirīya Upaniṣad* concludes by declaring that this *Brahman*-realization is 'established in the supreme Space (of one's own heart), *paramē vyomni-pratiṣṭhītā*'.⁷ This, once again, is one of the most important of Upaniṣadic doctrines: That Reality which is all-pervading, supreme and immense (*Brahman*)—the macrocosmic consciousness Principle—is non-different from, that is, absolutely identical with, the Truth, or Reality shining in one's own *cidākāśa*, the innermost Consciousness-Space of one's heart—the microcosmic consciousness Principle.

The Upaniṣads therefore analyse the human personality, the fundamental Ātman principle, into five layers or levels: *annamaya-ātman*, *prāṇamaya-ātman*, *manomaya-ātman*, *vijñānamaya-ātman* and *ānandamaya-ātman*. Each of these layers is an autonomous entity by itself, governed by its own laws; it is not that one is superior or inferior to another; it is not that one is superseded by another; it is not that one is sublated or eliminated

II

Inner versus Outer: The 'Ātman=Brahman' Equation

The Upaniṣadic rishis (=ṛṣi) asked another question. By turning the senses inward, by going deep into the core of one's own personality, one realizes that *Ātman* within, in the *cidākāśa*, the supreme Space within one's heart. What relation does this individual Consciousness Principle, *Ātman*, bear to the cosmic Consciousness Principle, *Brahman*, which is, as it were, without? Sri Ramakrishna asked the question in his own simple, inimitable style: 'Can you see God only when you close your eyes? Can you not see Him with open eyes as well?' There comes a point of time in the life of a *sādhaka* (spiritual aspirant) when he longs to know how he is related to the universe; how his individual Self (the *Ātman*) is related to the universal Self (the *Brahman*). This question takes him much farther—beyond his individual search within—until he realizes his cosmic Identity. From the analysis of the *Ātman* as manifesting in the five layers—*annamaya*, *prāṇamaya*, *manomaya*, *vijñānamaya* and *ānandamaya*—the question may be reframed as follows: How is the individual (microcosmic) *annamaya* related to the Universal (Macrocosmic) *annamaya*, the individual *prāṇamaya* to the Universal *prāṇamaya*, the individual *manomaya* to the Universal *manomaya*, and the individual *vijñānamaya* to the Universal *vijñānamaya*? [*Ānandamaya* is always Universal (Macrocosmic) and does not have a microcosmic counterpart]. Actually, there is no outside or inside in Consciousness, but as long as we feel that we are conditioned by the *annamaya*, *prāṇamaya*, *manomaya* and so on, we need to ask how this individual *annamaya*, individual *prāṇamaya*, individual *manomaya* and the rest are related to their Cosmic counterparts. When we realize ourselves as Conscious entities, conditioned though by the individual layers like *annamaya* and *prāṇamaya*, in great wonder we ask how this Consciousness is related to the cosmic Consciousness. My individual eye, which sees; my individual ear, which hears; my individual mind, which thinks—all these are impelled by a consciousness Principle, which moves and animates

me, the individual. In great wonder, the rishi of the *Kena Upaniṣad* exclaims: 'What is that Power impelled by which the mind is able to perceive; which is that Power that animates the prana, the life-force; what is that Force which impels speech; and who is that Shining One (*deva*) who activates the eyes and the ears to do their respective functions?'¹

In asking these questions, the rishi is trying to investigate into the source of that Power that Energy, that supreme Consciousness, which activates, animates and impels his own individual consciousness, and to realize the relationship between the two. At the end of the investigation, the rishi would realize that there is only one indivisible Consciousness, unbroken Awareness, which cannot be divided or broken up into the individual and the cosmic. But he begins his investigation with what he actually sees and knows and feels: his individual consciousness. This investigation, this process of enquiry, is of great current appeal, for today you cannot talk of the micro except in terms of the macro. There are two fundamental manifestations in nature: one is the microcosm and the other is the macrocosm. Swami Vivekananda speaks about these two manifestations in his famous lectures. 'The Universe: the Microcosm' and 'The Universe: the Macrocosm'. Thus, for every level of consciousness like *annamaya* and *prāṇamaya* there should be two corresponding manifestations, the micro and the macro. Strictly speaking, it would be incorrect to say that these two are related, rather, they are one and same, manifesting as two. The Advaitic (non-dualistic) school will say that the two are absolutely identical and non-dual; the Viśiṣṭādvaitic (qualified non-dualistic) school will assert that the micro is a part of the macro; and the Dvaitic (dualistic) school will claim that the micro is different from the macro, but eternal and absolutely dependent on and subordinate to it. These are philosophical wranglings into which we need not enter for the present. That the microcosm and the macrocosm are two manifestations of one and the same Reality, and therefore are built on the same plan, was revealed to Swami Vivekananda in a famous vision he had while meditating under a peepul tree in

Almorā. He later told Swami Akhaṇḍānanda, his dear brother disciple, 'Gangādhara, today I have solved one of my greater problems in life. I have realized the oneness of the microcosm and the macrocosm'. He recorded thus the substance of his vision in a notebook:

In the beginning was the Word etc.

The microcosm and the macrocosm are built on the same plan. Just as the individual soul is encased in the living body, so is the universal Soul in the Living Prakṛti (Nature)—the objective universe. Śivā [i.e. Kālī] is embracing Śiva: this is not a fancy. This covering of the one [Soul] by the other [Nature] is analogous to the relation between an idea and the word expressing it: they are one and the same; and it is only by a mental abstraction that one can distinguish them. Thought is impossible without words. Therefore, in the beginning was the Word etc.

This dual aspect of the Universal Soul is eternal. So what we perceive or feel is this combination of the Eternally Formed and the Eternally Formless.²

Swami Vivekananda also spoke of having seen the 'whole universe in an atom'. It is interesting to note that Rutherford had a similar perception when he invented the now-famous Rutherford Atomic Model. In this model, the electrons were thought of as revolving round the nucleus just like the planets round the sun. It was this vision of microcosm-macrocosm unity that prompted Rutherford to assert that the atom is built on the same plan as the universe. Much later, when Einstein was struggling with his General Theory of Relativity, he drew inspiration from a famous principle called Mach's Principle, according to which there is an unbroken continuum of matter. This gave rise to the idea that matter at the microcosmic level and matter at the macrocosmic level are just different manifestations of one 'ocean' of matter, as it were, and related to each other as a bubble or a wavelet to a huge wave. By the laws of unity of nature and uniformity of nature, this idea could be extrapolated and applied to the realm of the Spirit, and Advaita (non-duality) could be established. In one of

his great Advaitic moods, Swami Vivekananda exclaimed: 'Never forget the glory of human nature. We are the greatest God that ever was or ever will be. Buddhas and Christs are but waves of the boundless ocean which *I am*.'³ The 'I' he was speaking about was, of course, the 'Cosmic I', the 'Universal I', the '*virāt aham*'. He was speaking from the standpoint of the realization of his cosmic Identity. In such moods, he would also say that the ant and the worm, apparently small and insignificant in their manifestations, are non-different from Nazarene, the Prophet of Nazareth, Jesus the Christ, a Divine Manifestation of cosmic dimension.

The macrocosmic counterpart of the individual *Ātman* Consciousness (microcosm) is called *Brahman*. Since the microcosm and the macrocosm are one and the same, it follows that *Ātman=Brahman*, the famous Vedāntic equation. Advaita will say that *Ātman=Brahman*, that is, *Ātman* is identically equal to *Brahman*, while Viśiṣṭādvaita or Dvaita will say that it is not identically equal to, but slightly equal to and so on. These are but philosophical wranglings; but the truth of the equation is clear: microcosm=macrocosm. At that level of intuitive awareness, one cannot even assert 'I am *Brahman*', 'I' meaning the microcosm and '*Brahman*' the macrocosm; for 'I' is but a tiny bubble in the infinite ocean of *Brahman*, as it were. The famous *mahāvākyas* of Vedānta, the Great Statements of Identity, namely, *Tattvamasi* (That thou Art)⁴ and *Aham brahmāsami* (I am *Brahman*),⁵ also fall far below in comparison with this actual *awareness* of Identity. There is no 'Thou' or 'I' to say 'That thou art' or 'I am Brahman'; there is only one infinite, unbroken continuum of Consciousness in which the concepts of 'Thou' or 'I' become irrelevant and meaningless. In his own inimitable and homely fashion, Sri Ramakrishna gave a beautiful illustration: A salt doll went to measure the depth of the ocean; now, who would be there to come back and give any information about the ocean? Similarly, when the 'I', the individual consciousness, seeks to fathom the fathomless infinity of the ocean of cosmic Consciousness, it simply melts away and becomes one

with the Ocean: '*Brahma veda brahmaiva bhavati*, A knower of Brahman verily becomes Brahman', as the *Muṇḍaka Upaniṣad* would say.⁶ This means there is no question of knowing *Brahman* as an object; you can only know It by actually *becoming* It.

Globalization concept related to microcosm-macrocosm oneness: Upanishadic method of Absolute Negation—'*Neti neti*'—leads to Absolute Affirmation

This realization of the Upaniṣadic rishis of the oneness of the microcosm and the macrocosm at all levels—namely, *annamaya*, *prāṇamaya*, *manomaya* and *vijñānamaya*—culminated in the '*Ātman=Brahman*' equation. The appeal of the *Upaniṣads* today is here: in today's world nobody can talk of the microcosm except as a part of, or as subsumed by, or as identical with, the macrocosm. The buzzword today is 'globalization', whose essence is the unity of everything: seeking and finding the uni-verse in this apparent multi-verse. The appeal of the *Upaniṣads* today is that they contain the only philosophy by which the whole universe can be united, globalized. In fact, Vedānta, the philosophy of the Upaniṣads, says that one cannot even talk of globalization, for it would mean that we are trying make global something, which was not global already. In 'globalize', we have the suffix 'ize', the *abhūta-tādbhāva*, '*chvī*' *pratyaya* of Sanskrit grammar, which means that something was not global earlier, and we are now making it so. No; Vedānta says that the universe has been global and will be global all the time—only our ignorance, *ajñāna* or *avidyā*, makes it appear as non-global. The so-called globalization means the removal of *ajñāna* or ignorance, so that the immediate realization of globalization that already was, gets revealed to consciousness.

Now, globalization can take place at all levels of consciousness: globalization at the physical level, *annamaya*, is being attempted by the physical sciences; globalization at the life-force level, *prāṇamaya*, is being attempted by the life sciences, biotechnology and the like; globalization at the mental level, *manomaya*, is in the realm of psychology; globalization at the intelligence level,

vijñānamaya, is being attempted by information technology, communications engineering and artificial intelligence people. The bliss level, *ānandamaya*, the Upaniṣads say, is always global: there is no individual, microcosmic, *ānandamaya-ātman*. Thus, the Upaniṣadic philosophy alone is capable of uniting the world—again, you do not unite the world: you only perceive the Unity that exists already and always; and this state of perception, all differences cease. The moment one sees differences, says the Upaniṣad, one goes round and round the cycle of birth and death.⁷ There is no manifoldness, there is no difference, *nānā*, anywhere, and this perception of the many, *nānātva*, is due to ignorance, *ajñāna*. In reality, there is only one. When we say there is only one, it is not that there is one as against two, three or four, but it is that there is just only one, without any possibility or conception of two, three or four. The Vedāntic terminology, therefore, is One-with-out-a-second, *ekam eva-advitīyam*. This is the only language in which we can express it. The moment we talk of two, three or four, that is manifoldness, we are in the realm of objects, things which we perceive by our senses—our consciousness, *prajñā*. On the other hand, if we talk of one inner reality, as against and as juxtaposed with two, three or four (the manifoldness), then our consciousness would be inward-focuses: *antaḥ prajñā*. Absolute Negation and absolute Affirmation are one and the same thing. Buddha absolutely negated everything and asserted that the Reality is *śūnya*, meaning absolute Negation, while the Upaniṣads assert that the Reality is *pūrṇa*, meaning absolute Affirmation. We do not negate absolutely and therefore we see negation and affirmation as two different things.

The three bodies (*śarīra-traya*) and the three states (*avasthā-traya*) related to the five layers of the Ātman: Upaniṣadic philosophy is derived naturally from our daily life and experience by the Principle of Projection—hence its eternal appeal

In the Upaniṣadic paradigm, the five layers of the Ātman—

annamaya, prāṇamaya, manomaya, vijñānamaya and ānandamaya —are further reduced to three bodies (*śarīratraya*): the *annamaya* is the gross body (*sthūla-śarīra*); *prāṇamaya, manomaya and vijñānamaya* together constitute the subtle body (*sūkṣma-śarīra*); *ānandamaya* constitutes the causal body (*kāraṇa-śarīra*). Each of these three bodies has a microcosmic aspect and a corresponding macarocomic aspect: *vyāṣṭi and samaṣṭi* respectively. In their micro-aspects these three bodies operate through our individual consciousness every day: consciousness steering the microcosmic gross body, called in Vedānta *vaiśvānara or viśva*, is operative in the waking state of consciousness; consciousness piloting the microcosmic subtle body, called in Vedānta *taijasa*, is operative in the dream state of consciousness; and consciousness associated with the microcosmic causal body, called in Vedānta *prājña*, is operative in the deep, dreamless state of consciousness. The macrocosmic counterparts of these three are, respectively, *virāt, hiraṇyagarbha and īśvara*.

Thus, when we talk about our body, Vedānta would ask: Which body do you mean? Is it the gross body, the subtle body or the causal body? When we dream, see buildings and people and all kinds of things in it, what is the light by which we see them? There is an inner light, *antarjyoti*, by which we are able to see objects and persons in dreams. That light cannot be of any external origin, because there is no externalized consciousness in dream, consciousness being inward-focused in that state: *antaḥ-prajña*. The gross body, the *sthūla śarīra*, is not operating in the state; all the activities are of the subtle body, or *sūkṣma śarīra*. Our consciousness throws this light up, throws up all the objects and persons and sees all these things in the strange inner light. When you go still farther and deeper, when you lapse into deep, dreamless sleep, you do not see anything, perceive anything. From this state of deep sleep (*susupti*), you spring back to the dream state (*jāgrat*). These are our daily experiences, and not some imaginary, philosophical speculations.

This is one tremendous appeal of the Upaniṣads today: Vedānta

as a philosophy is not cut off from our day-to-day, actual experiences. Rather, it is these very experiences that form the basis of this philosophy. Vedānta is not speculative or other-worldly, but rooted in this very world of the daily experiences of you and me. This philosophy is therefore of immense appeal and value to men, women and children in all walks of life, in all places, in all situations all over the world. Vedānta has thus a universal appeal, for it deals with our daily life and experiences. Everybody in the world, wherever, whoever or whatever he may be, passes through these three states of waking, dream and dreamless (deep) sleep. Only, we do not care to investigate into them or ask deeper questions about their fundamental root or source. In India, philosophy is called *darśana*, which means seeing, perceiving. Every Indian is, therefore, a philosopher, if he tries to see through his daily experiences, analyse them, investigate into them and find out the deeper source from which they spring and on which they rest. According to Vedānta, therefore, philosophizing does not mean polemics, speculating or theorizing. It is actually seeing Reality, having a vision of Truth. You look at your daily life, ask profound questions about your daily experiences, investigate deeply into them and on the basis of this inquiry, this search as a rational scientist, form your world view, your *Weltanschauung*. This is of great appeal today, when dogmas and theories and speculations are being subjected to the test of reason and investigation; the baseless ones among them are “crumbling away like masses of porcelain under the tremendous sledge-hammer blows of scientific research” in the words of Swami Vivekananda.⁸ He therefore exhorted us to go back to the *Upaniṣads*, which propound the wonderful, scientific, rational philosophical system of Vedānta, discovered by investigation into our own daily life and experiences.

I know that I eat and drink and talk and move about while I am awake (*jāgrat avasthā*); I know that I see various kinds of objects and persons which I project out of my own consciousness while I am dreaming (*svapna avasthā*); I know that I lapse into a blank—no objects, no persons, no motion, no seeing and so on—

while I am deeply asleep (*susupti avasthā*). These three *avasthās* are not speculative, but part and parcel of my daily experience. By investigating into these *avasthās*, I can easily see how they are self-contradictory: the waking state experience is contradicted by dream state experience. So I reject all of them as unreal, being mutually contradictory; I realize that the contradictions arise because I identify myself with these states and participate in these experiences. Therefore I see that if I dissociate myself from these states and the experiences, then the contradictions would cease to exist and would have no relevance for me. With this understanding comes the direct and immediate (*sākṣāt, aparokṣāt*) realization (*anubhūti*) that I am in reality the non-participating Witness of these three states (*avasthā-traya-sākṣin*) and my real self (*Ātman*) is absolutely dissociated from the three bodies and the five layers of consciousness, with which I was ignorantly associating myself (*sarīra-traya-vilakṣaṇa, pañca-kōśa-vilakṣaṇa*).

My real Self is eternally Pure, of the nature of absolute Awareness and ever free (*nitya-śuddha-buddha-mukta*); I am, in reality, Existence Absolute, Knowledge Absolute, Bliss Absolute (*sat-cit ānanda-svarūpa*). I permit all the three states to play on Myself, just like the cinema screen permits all the various scenes to have their full play on it, itself remaining absolutely unaffected by the changes taking place over it. When there is a scene of flood on the screen, the screen does not get wet; not does the screen get burnt out when there is a raging fire playing on it. When all these plays cease, the screen remains in its own true nature: the pure white. Likewise, when the Self is no longer caught in the play of the *avasthās* anymore, then it remains established in its own true glory: *sve mahimni pratiṣṭitah*.

The Upaniṣadic investigation into the profound truths about our own selves, into the nature of Reality, is made with the help of very common examples from daily life. Philosophy thus grows out of everyday perception and experience. It is therefore meant for everybody who is anywhere, and in whatever state or station in life. This is the special appeal of the Upaniṣads today.

An Example from the *Bṛhadāraṇyaka Upaniṣad*

The following interesting anecdote, the simple investigation into reality, by asking simple questions about our daily life and experience, is a case in point. It is from one of the greatest of the *Upaniṣads*, the *Bṛhadāraṇyaka. Yājñavalkya*, the great sage of this *Upaniṣad* and its hero, goes to King Janaka, with the desire of discussing *Brahman*. Janaka asks him some simple questions. *Yājñavalkya's* replies to them constitute the theme of this section in the *Upaniṣad* called '*Jyotirbrāhmaṇa*':

Janaka: What is the light by which we see, move around and perform our daily activities?

Yājñavalkya: By the light of the sun, O king.

Janaka: When the sun has set, what is the light by which we see, move around and perform our daily activities?

Yājñavalkya: By the light of the moon, O king.

Janaka: When the sun has set and the moon has also set, what is the light by which we see, move around and perform our daily activities?

Yājñavalkya: By the light of fire, O king.

Janaka: When the sun has set, the moon has also set, and the fire is extinguished, what is the light by which we see, move around and perform our daily activities?

Yājñavalkya: By the 'light' of speech, O king. For, when it is pitch dark, so dark that we cannot even see our own hand, it is speech by which we identify people, move around and do our daily activities.

Janaka: When the sun has set, the moon has also set, the fire has been extinguished and speech has been hushed, what is the light by which we see, move around and perform our daily activities?

Yājñavalkya: By the light of the Self (Ātman).

Janaka: What is this Self?

Yājñavalkya: This is of the nature of Consciousness, the inner

Light, which lights up the hearts of all living beings; it is as if it meditates, It vibrates and so on.

(But in actuality, It is the non-participating Witness of all activities of body, mind and senses.) From here on, the *Upaniṣad* analyses the states of dream and waking states, pointing out that it is this inner Light by which we see dreams and so on.

An understanding into the cosmic mysteries like creation and the origin of the universe is sought through an understanding of the microcosm, by the principle of projection. This is the modern appeal of the *Upaniṣads*. We project from the microcosm, which we know, onto the macrocosm and try to understand the mysteries of the macrocosm. This is exactly the process by which science has progressed all along. How did Rutherford discover his atomic model? We have already seen how, having discovered the central positive core in the atom called the nucleus, Rutherford was unable to understand the arrangement of electrons in an atom. He then projected the macrocosmic scheme of the planets going round the sun into his micro-world of the atom and suggested that the electrons are moving round the nucleus like planets round the sun. In fact, he called his peripheral electrons moving round the nucleus as 'planetary electrons'.

When I dream, I create my own dream objects, which are nothing but my own consciousness; this shows that my individual consciousness has the capacity to divide itself into the subject and the object. Make a projection from here to the macrocosm. The macrocosmic Consciousness, in a state similar to my micro-dream—may we call it the macro-dream!—creates Its own dream objects, which are we, the created beings! You, I, all the beings, plants, animals and objects—in fact, everything we see in this created universe—may be conceived of as dream objects of the universal Consciousness, the supreme *Puruṣa*, who is in a state of macro-dream. Since this *Puruṣa* is Universal, we call Him *Puruṣottama*; the *Purāṇas* would call Him *Mahāviṣṇu*, who is imagined to be always in a dreaming posture, *anantaśayana*, His dream resulting in creation. Just as the dream objects of my micro-dream do not

know me as the dreamer, we, the dream objects of the macro-dream of the Supreme *Puruṣa*, do not know Him as the Dreamer! Thus is explained our ignorance of the Creator God, as long as we are identified with the creation, taking it to be real! The dream of the *Puruṣa* is called *yoga-nidrā*, because He is not helpless in His dream as we are in our micro-dream. His dream is supreme *Yoga*, and He shows us the power and glory of His *Yoga* through his creation: *Paśya me yogam aiśvaram*.⁹

The most profound appeal of the Upanishads is that they deal with a subject that is of universal and timeless interest to everybody everywhere: 'I'

Lastly, the profound appeal of the *Upaniṣads* today is because it deals with a subject that is of universal interest and appeal. The subject matter of the *Upaniṣads* is *ātma-vidyā*, which is knowledge of the 'I', myself. The *Upaniṣads* investigate into the real nature of the 'I' consciousness, which each one of us possesses. Since this subject is universal, time and space-independent, all peoples all over the globe, irrespective of nationality, creed, religion, gender, time and space, can draw inspiration from the *Upaniṣads*. Therefore, it is only the *Upaniṣads*, the Vedānta philosophy based on the *Upaniṣadic* wisdom, that can bring about a real 'global village', a theme of great contemporary relevance and importance.

The eligibility of the student, *adhikārin*, is an important question discussed in the study of Vedānta. Who is eligible to study the *Upaniṣads*? Leaving aside the classical concept in this connection, we may put it very simply in today's context: to study any subject, the first criterion of eligibility is the aptitude of the student; that is, how the subject matter of the study interests the student—is it relevant for him? Since the *Upaniṣads* deal with the subject 'I', that is, 'myself', it cannot but interest everybody. Anyone who feels the 'I' consciousness is therefore an eligible student for the study of the *Upaniṣad*. Once upon a time, *Upaniṣadic* knowledge was considered esoteric knowledge (*rahasya-vidyā*), not meant for anybody and everybody. This sense of secrecy gave rise to an

unhealthy tradition of monopoly of knowledge, clannish authority and privilege. This was one reason why it remained confined to caves and forests, mystified intentionally by its self-styled custodians, making it inaccessible to the common man. Swami Vivekananda, the prophet of this age, came to break down barriers and stretch the frontiers of knowledge to infinity. He exhorted everybody to go back to the *Upaniṣads* and quench their thirst in its immortal springs. Exclusiveness and privilege will go when we realize that the subject matter of the *Upaniṣads*, which is the 'I' and its real nature, is within everybody's claim. Anyone with the 'I' sense is, therefore, eligible to be enlightened by the *Upaniṣadic* wisdom, which is the *ātma-vidyā*.

There was a study made in USA on which the single English word people most often use. The study revealed that the word used most often was 'I', the first person singular pronoun. Everywhere says, 'I', 'I', 'I'. But nobody actually knows what this 'I' is, what its real nature is. It is this subject, the real nature of the 'I', that the *Upaniṣads* deal with. In fact, the *Upaniṣads* says that *aham* ('I') is the name of the *Ātman*. When somebody knocks at your door, and you ask from inside Hey, who's that?' the answer you would invariably get is 'It's me'. The caller will not announce himself by telling his name; he has so identified himself with his 'I'—consciousness, that the name he would use to identify himself is 'I'—*aham*, which is the name of the *Ātman*. Just as *Om* is the name of *Brahman*, the macrocosmic counterpart of *Ātman*, *aham* is the name of *Ātman*. We do not, however, care to enquire. What is this 'I'? Who am 'I'? this was the path that was highlighted and propagated in recent times by Sri Ramana Maharshi, the sage of Arunachala. Interestingly, the compilation of the sayings of Sri Ramakrishna, (who is conventionally taken to be overwhelmingly given to *bhakti*) by his beloved chosen disciple and spiritual son, Swami Brahmananda, opens by asking this profound question 'What is this "I"? Is it my hand or foot or any other part of my body? Reflect well and you will know that there is no such

thing as ‘I’. The more you peel off the skin of an onion, the more skin only appears—you cannot get any kernel; so when you analyse the ego, it vanishes away into nothingness. What is ultimately left behinds is the *Ātman* (soul).’¹⁰ This being the most interesting subject for anybody, the *Upaniṣads* invite everyone to perform this profound investigation in the depths of his being. Who will not be interested in studying himself? All that I now study—science and technology, arts and crafts and the like—is being studied by me, for myself. It is me in whom I am most interested. It is you in whom you are most interested. It is oneself (Vedānta would say, one’s Self), in which one would be most interested. The sage Yājñavalkya tells his wife Maitreyī in the *Bṛhadāraṇyaka Upaniṣad*:

It is not for the sake of the husband that the husband is beloved (of the wife); but because of the Self that the husband is beloved. It is not for the sake of the wife that the wife is beloved (of the husband), but because of the Self that the wife is beloved...It is not for the sake of everything that everything appears beloved, but for the sake of the Self that everything appears beloved. This Self should be seen (realized)—should be heard of, should be reflected upon, should be deeply meditated upon. For, on realization of this Self—on hearing of It, reflecting upon It and deeply meditating upon It—everything else becomes known.¹¹

If you use the small ‘s’ it is the ego, and if you use the capital ‘S’, it is the Self, or the *Ātman*. When we investigate into the truth of the self, we realize that there is only one Self, the *Ātman*, and the ego is only an unreal myth, a shadow of the Self. Thus, there are not two selves. There is no small ‘s’ and capital ‘S’.

The question asked by the great house holder, Śaunaka, to the sage Aṅgiras, in the *Muṇḍaka Upaniṣad* 1/1/3, ‘Sir, what is that by knowing which everything else becomes known?’, is answered here, as in the *Muṇḍaka Upaniṣad* 3/2/9, by saying that it is the knowledge of the Self, *ātma-vidyā* (which is the same as *brahma-vidyā*) that would confer on the realizer a knowledge of everything

else. The Theory of Everything (ToE), which physicists all over the world are seeking today, is here: Self-knowledge, *ātma-vidyā*. The appeal of the *Upaniṣads* is therefore eternal, for they deal with Self-knowledge, which is the key to the knowledge of All. When we realize the true 'I', the real 'I', as the Infinite and the Absolute, shining always as the Light of pure Awareness, vibrating as Life and Consciousness, saturating and percolating all living and non-living beings everywhere—it is only then that our lives become meaningful; there comes to us everlasting fulfilment and blessedness. Without this realization, our lives have no meaning or purpose—'great is the loss', in the language of the *Kena Upaniṣad*.¹² The *Upaniṣads* invite us to this Kingdom of God that is within every one of us. This is the appeal of the *Upaniṣads* today, when human beings are caught up in a mad rush to acquire more and more and more, with their minds outward-focused, consumed in an insatiable fire of sensory passion and desire. Such human beings can only engender an acquisitive, consumerist and possessive society, with more violence, corruption and mutual suspicion. The saving message of the *Upaniṣads* comes like a shower of nectar amidst this 'scorching sun of the mind-day summer of worldiness and sensuality and acquisitiveness that is fast roasting the innermost soul of humankind in its sweltering heat. The *Upaniṣadic* wisdom, which is the science of the Self (*ātma-vidyā*), is the only message that can quench this heat and redeem the 'modern man in search of his soul (Jung) and save him from the great fear of destruction that is looming large on today's horizon'.¹³ This is the appeal of the *Upaniṣads* today to which we need to respond most urgently, if we are eager to save humankind from annihilation.

Notes and References :

1. *Kena Upaniṣad*, 1.1.
2. *The Complete Works of Swami Vivekananda*, 9 Vols. (Calcutta: Advaita Ashrama, -8, 1989-9, 1997), 9.291.

Freedom And Nothingness : A Phenomenological-cum-Existential Approach to The Problem From Jean Paul Sartre's Viewpoint.

Aditi Bhattacharya

Jean Paul Sartre, the famous French philosopher, is no less a phenomenologist than he is an existentialist. Sartre is commonly regarded as an existential philosopher, but his philosophical approach is very much in tune with both the traditions of existentialism and phenomenology. As an existentialist Sartre is interested in studying man by analyzing his existence and this analysis of human existence has shown us that man has no essence to determine him. Sartre says, as man has no given essence he is not 'something'; there is nothing to pin him down, to bind him up with particular fixed characteristics and that is why man is free in the true sense of the term. By means of reduction human consciousness nihilates itself from all beings—everything has been outcast from consciousness. Consciousness is thus empty of objects/contents and all other beings of the world are reduced to mere objects of consciousness. Here Sartre is very much influenced by Husserl's phenomenological method of reduction. Husserl points out that consciousness reduces everything as its 'object'—consciousness is 'consciousness of something'. In relation to consciousness everything exist as 'something' and by exercising its power of detachment consciousness thus exists as mere nothing.

In contrast with human consciousness all other beings of the world are characterized by full positivity. Sartre in his **Being and Nothingness** describes these beings as 'being-in-itself (en-soi)'—they are solid, massif entities. They are 'self identical' entities in the sense of being static and closed. They always remain what they are having no possibility of developing or growing (except physical growth or change) into something else. Human being, whom Sartre calls 'being-for-itself (pour-soi)', is, on the other hand, characterized by a sort of openness—it has a division in itself. It is not a self-identical being in the same sense in which being-in-

itself is, that means it is not a static entity. Hence, human consciousness cannot be characterized as 'something'. To quote Sartre, consciousness is "not what it is and is what it is not",¹ that means human consciousness does not remain satisfied with 'what it is'—it always aspires for 'what is not'. Being-for-itself is thus a developing being, he is a project-oriented-being who is striving for something which is not-yet-achieved. As a striving being he is a free being. In the process of realising that which is not-yet-realised, being-for-itself has to transcend the given states of affair and project his being towards the future. He constantly transcends that which is there to tie him up with the given states of affair and this act of transcendence indicates that there always remains a gap within the being of man which he has to patch up or fill up through his projective acts. This gap has been technically termed as 'lack' or 'nothing' inherent in the very being of man. This 'lack' points out a sort of insufficiency on the part of man. Man is insufficient because he is characterized by ever-elusiveness, there is a sort of hole in him through which his 'being' slips out ever and ever. As an ever-fluid existence, human being is 'nothing' and hence free.

Characterizing being as nothing, Sartre emphasizes on the nihilating acts like imagining, questioning, doubting etc. All these acts are in tune with Sartre's phenomenological description of consciousness because it is through these nihilating acts consciousness exercises its power of detachment and transcends the given surroundings. Thus these nihilating acts are, according to Sartre, expressions of man's freedom.

In his famous book '**The Psychology of Imagination**' Sartre has dealt with the nature of imagination which is the specific act of man alone and which helps him to stand above the level of other living beings of the world. Imagination acts as an instrument for man's enjoyment of his true freedom because it is by virtue of his acts of imagination that he can dissociate himself from the

1. *Being and Nothingness*, J.P. Sartre, Mathuen and Co. Ltd. up 1979, University paperback edition, page 11.

trammels of the actual world. In imagination human consciousness posits an hypothesis of unreality—here “consciousness should be able to form and posit objects possessing a certain trait of nothingness in relation to the whole of reality”². Like perception, imagination also posits an object but it does not posit an existing object. Sartre has stated that imagination posits its object in four different ways—it does posit its object either as ‘non-existent’, or as ‘absent’, or as ‘existing elsewhere’ or it does not posit its object as existing. In all these four cases our positional act is negative. The first two acts are clearly acts of negation, the third one, though apparently positive, is implicitly negative because it denies the present actual existence of an object; the fourth act is also negative because it indicates a ‘neutralization of a proposition’. When I imagine a friend of mine who is not present here and now before me, my consciousness surely posits an object who can otherwise be seen, touched or heard by me if I sensorily experience him; but here I am conscious of the fact that he, who can be so sensorily experienced by me, is not being actually experienced by me. Here I intuit my friend because I immediately apprehend him in my imagination, yet I do not intuit him as present, but as absent. Imagination, actually in Sartre’s language, is not ‘non-intuitive’ but ‘intuitive-absent’. Here it should be noted that my imagination of my friend is different from my imagination of a centaur because the former has an existence in the world of reality while the latter has not; yet there is a subtle underlying similarity between them—both of them belong to the category of imagination/imaginative positing, because in both cases our consciousness posits its object as non-existing or as absent. Thus it is evident that there is an element of unreality characterizing the object of imagination.

The fact that an object of imagination is characterized by a sort of unreality is, Sartre thinks, sufficient to prove that an object of imagination is completely different from an act of perception. In perception we posit an object positively which exists for the perceiver in a particular place at a definite point of time, while

2. *Psychology of Imagination*, J.P. Sartre, Page 243.

in imagination we undoubtedly posit an object but we posit it negatively: the object of imagination has either no existence for me here and now or has no existence at all in this world of ours. By pointing out this distinction Sartre has given a blow to the belief of David Hume (the traditional empiricist thinker) that imagination has no separate existence other than perception. Hume declares that images are mere faint representations of the sensations and the objects of the image are in the image. Sartre has criticized this belief by calling it 'an illusion of immanence' and has shown that both in perception and imagination the object exists outside my consciousness as consciousness reduces every thing as its object and intends them as 'something' existing out there. The only difference that exists between perception and imagination is that in perception my consciousness does encounter the object as existing but when I imagine the case is otherwise.

By arguing in favour of the independent status of imaginative consciousness, Sartre points out that imagination—can be viewed as the right instrument indicative of man's freedom. Our perception is strictly related to the given. Perceiving consciousness in no way goes beyond the given materials; it cannot transcend the stern reality. The case is similar with our conceptual consciousness. When I think of a particular object by a concrete concept, I think of it in terms of a collection of relationships which are applicable to our real world—our thought cannot go beyond them. In imagination alone our consciousness goes beyond the limits of the given materials. Imaginative consciousness is thus marked by spontaneity—it is through and through active and creative. It creates its own objects by positing them as non-existing. The positional act of the image is negative, i.e. privative. Sartre has pointed out that this power of imaginative consciousness to sever itself from the boundary of the real world can be proved by the fact that 'the image of something' remains unchanged in the midst of the changes of the milieu surrounding the object of whose image is being formed. Suppose, a lover is looking at the portrait of his beloved and grasping it as the image of his young beloved who had died many

years before. The portrait, which is serving here as an analogue for the manifestation of the image, has faded out throughout the years but the image of the beloved remains as colourful and bright as ever. The portrait 'being-an-object-in-the-midst-of-the-world' cannot escape the changing laws of the world, but the image being an 'unreal object' (unreal in the sense of not being worldly) has escaped the trammels of the physical world—it remains unaffected by the change which the physical object has undergone. In order to produce the portrait of the beloved as an image, consciousness has to deny the reality of the portrait and thus it is on 'the fringe of the whole of reality' that consciousness has to construct the image by denying the reality, which means **consciousness as imagining must be free**. Sartre here notes that this freedom of imaginative consciousness cannot be equated with arbitrariness—consciousness cannot completely negate the world; in order to grasp the image, consciousness has to negate the world from a certain point of view. The appearance of the image of the beloved who is no longer now in the world is built upon the foundation of the 'lover's affective expectation of the real presence of his beloved'. This observation of Sartre points out the important phenomenon that freedom is always freedom in relation to the world—the emergence of the image is always possible on the foundation of the world. In order to imagine consciousness has to free itself from the 'being-in-the-world' but 'being-in-the-world' serves as the necessary foundation for the emergence of an image. Sartre says that the 'image' as unreal is characterized by a two fold nothingness—it is nothingness of itself in relation to the world and at the same time it is nothingness of the world in relation to itself and this twofold nothingness is always constituted on the foundation of the world which it denies. Sartre points out that "imagination is not an empirical and super-added power of consciousness, it is the whole of consciousness as it realises its freedom....."³

Consciousness being consciousness 'of something' must be

3. *Psychology of Imagination*, J.P. Sartre, page 243

always 'in a situation' but being 'free' it has, at the same time, the concrete possibility to deny the world and to produce the unreal; this concrete possibility of producing the unreal in imagination is one of the most important expressions of the nature of consciousness as transcendently free.⁴

Sartre thinks that man's capacity to negate something is initiated by another act besides imagining—it is his act of questioning or doubting. In his **Being and Nothingness** Sartre has shown how an act of questioning involves an act of negation. The process of questioning, according to Sartre, involves two non-beings. On the one hand, it implies a negation or lack in the knowledge of the questioner and on the other hand, there is a permanent possibility of the existence of a real 'non-being' or negation in the outer world. Sartre declares that "the permanent possibility of non-being, outside us and within, conditions our question about being"⁵. While I question or doubt something, the very act of my questioning or doubting implies that I lack a certain knowledge regarding the item questioned; not only that it also implies a sort of objective uncertainty characterizing the item which I am questioning or doubting. If the objective reality of the item is very much certain there would be no scope of questioning or doubting its being. Thus the very act of questioning or doubting implies that there is a permanent possibility of its non-being in the outside world. This capacity to question or doubt something is very much important because it indicates man's freedom. It is the capacity through which human consciousness places itself beyond causality—a world where everything is predetermined by a mechanical causal law and where there is nothing called possibility. Sartre thinks that this capacity of questioning or doubting has crowned

4. This thought of Sartre is shared by many philosophers who also hold that man's power of imagination is the essential sign of freedom—freedom to dissociate himself from the actual world. E. J. Furlong in his book 'Imagination' has clearly stated ".....to act 'with imagination' is to act with freedom, with spontaneity, it is to break with the trammels of the orthodox, of the accepted: it is to be original, constructive". (Imagination, E.J. Furlong, page 25, London, 1961)

5. *Being and Nothingness*, p. 11.

man with a royal dignity because it gives man the freedom to say 'no' to the existing reality which would otherwise pose a strict limitation upon him. In his famous book **'The Irrational Man'** William Barrett has pointed out that this capacity of the human mind was first introduced by Descartes through the mechanism of his 'methodic doubt'. There we find that Descartes proposed to say 'no' to everything unless and until he arrived at the certitude of his own being which is indubitable and thus beyond all kind of negation. "But before this certitude shone for him (and even after it, before he passes on to other truths), he saw nothingness, a negativity existing outside of nature and history, for he had temporarily abolished all bodies and memories".⁶ Barrett thinks that Sartre, when he points out to this human capacity of saying 'no' to everything has before his mind the Cartesian model of methodic doubt. This observation of Barrett is quite important. Sartre, undoubtedly, is greatly influenced by Descartes's philosophical thought and in his **Being and Nothingness** he has repeatedly spoken about the process of doubting 'or' 'questioning' as an instrumentation of man's capacity to assume a negative stand in relation to the world, which is expressive of his freedom.

II

Now, if 'negation' is thus initiated by the nihilating acts of imagining, questioning or doubting then it is the man who introduces 'nothingness' into the world as all these acts are distinguished acts of man alone. But if this is so, is nothingness a mere subjectivity or a kind of empty abstraction? A closer scrutiny in **Being and Nothingness** will show that Sartre vehemently opposes the notion that 'nothingness is a mere subjectivity or an empty abstraction. There he has told us that 'non-being is not a subjective entity. It is true that non-being is encountered within 'being' only by human consciousness yet it is erroneous to hold that 'non-being' is produced within 'being' by

6. *The Irrational Man*, William Barrett, Page 216, William Heinman Ltd., London, 1961.

human consciousness. Sartre also rejects the view that 'non-being' is a mere abstraction. We intuit non-being or nothingness through the concrete experience of 'absence', 'fragility' etc. Sartre criticizes the famous Kantian view that 'non-being' is derived from the negative judgements by the process of abstraction. He shows, on the contrary, that the negative judgement is derived from the concrete experience of 'non-being'. Just as 'being', 'non-being' is also given to our intuition. When looking for my friend in a library I do not find him there, his 'absence' is directly given to me; I intuit his 'non-being' and from this intuition of nothingness I make the negative judgement 'he is not here'. From this it becomes clear 'that non-being does not come to things by a negative judgement, on the contrary which is conditioned and supported by non-being'.⁷ It is true that the absence of my friend in a particular place as a non-being is introduced in that place by my consciousness because he is absent for me alone; for me who expects him to find in that library; yet it should be remembered that my consciousness can never encounter the non-being of my friend if it does not exist as a concrete objective fact. It is because my friend is absent in the library my consciousness posits him as 'non-being'. Non-being is thus not created by the subject, it exists 'out-there'—in the outer world to be encountered or discovered by the subject.

Having made it clear that 'non-being' is an objective and concrete fact, Sartre launches an attack upon the Hegelian concept of 'non-being' or negation. The Hegelian dialectical concept of 'nothingness' is an abstraction. According to Hegel pure-'being' and pure 'non-being' are equally abstractions; the only concrete is the 'totality produced by the synthetic integration of all abstract moments.' In Hegel's *Logic* 'being' and 'non-being' are as two opposites. The 'being' is that whatever 'is' or 'exists' and 'non-being' is that whatever 'is not' or 'does not exist'. Both of them are equally incomplete because they generate a contradiction which

7. *Being and Nothingness*, J.P. Sartre, Page 1 I

can be resolved only on a higher plane—on a higher synthesis of ‘becoming’. This ‘becoming’ also generates a contradiction by giving rise to its opposite which requires a further synthesis into a higher plane and this process goes on unless and until our thought reaches the highest plane, the highest truth, i.e. the absolute where all contradictions get resolved. Thus it is clear that “Hegel’s notion of ‘non-being’ is simply abstract negation of being which adequately accounts for empty notions, such as square-circle but does not account for the concrete nothings, such as absence”.⁸ Sartre thinks that the Hegelian notion of nothingness which is an empty abstraction can in no way exist because an emptiness is always an ‘emptiness of something’—emptiness can never be the ‘emptiness of nothing’. Non-being, which is a denial of being, indicates a concrete absence, i.e. the absence of ‘being’.

Sartre admits that Heidegger’s phenomenological account of nothingness is surely an advance upon Hegelian account. In the Heideggerian philosophy nothingness is not presented as an abstraction but it is described as a concrete fact. Nothingness cannot be discovered through the process of logical reasoning, it is to be concretely experienced in our everyday activities, as for example, in the activities like regret, hatred etc. Heidegger speaks of a single ‘mood’ in which we confront with the experience of ‘nothingness’—that is the dramatic mood of ‘Angst’ or ‘Dread’. Heidegger tells us that ‘nothingness’ is always supported and conditioned by ‘transcendence’. Now the point is in what sense the term ‘transcendence’ is used by Heidegger. Transcendence, according to Heidegger, is a special act of human being or Dasein which constitutes his self-hood and which helps him to secure his independence from other beings in the world. Dasein is a kind of ‘being’ in whom the ‘Being’ which constitutes his ‘being’ remains concealed. In order to know the ‘being’ of Dasein, i.e. his status as finite human being, the non-concealment of ‘Being’ is necessary. And this non-concealment of ‘Being’ is made possible by virtue

8. “A Commentary of Jean Paul Sartre’s *Being and Nothingness*” Joseph. S. Catalano, Page 60. Harper and Row Publishers—1974.

of the act of transcendence. In order to discover his own 'being' Dasein transcends the everyday world and extends himself in the forward towards the ek-static abyss of future that is open before him. In the process of surpassing the given everyday world he makes himself standing apart from the other human beings of the world and infacing the ex-static abyss that lies before him he discovers his own 'nothingness' in 'anguish' and 'dread'. Thus nothingness is encountered by man only when he **surpasses the given world**. But Sartre says "if I emerge in nothingness beyond the world, how can this extra-mundane nothingness furnish the foundation for those little pools of non-being which we encounter each instant in the depth of being."⁹ In the very depth of being we encounter 'non-being' as given. In our everyday experience when we encounter with negativity, as for example, when by encountering the 'absence' of my friend in a particular place I say 'my friend is not here' I do not have to transcend the world towards nothingness; I simply deny the existence of my friend not by 'transcending the world', rather it is encountered by me 'within the world' (here the world is the particular place where I am looking for my friend). Moreover, Sartre points out that man's power of transcending the world itself implies a negation on the part of his own being for in order to transcend the world he has to deny first that he is in the world. Thus, according to Sartre, 'transcendence' which in Heidegger's philosophy serves as the condition for the emergence of nothingness is itself conditioned by a previous 'non-being' within man's own being. Sartre has shown us that man is characterized by an inherent nothingness. In the words of Sartre, "nothingness, lies coiled in the heart of being like a worm."¹⁰ Because of this inherent nothingness man does not become identified with the other beings of the world—he can assume a negative/annihilating attitude towards the world, tearing himself off from the worldly determination and thus transcend it. Hence as a being situated in the world (not by

9. *Being and Nothingness*, J.P. Sartre, page 19.

10. *Ibid.*

transcending the world) man negates the world on the basis of his inherent nothingness, expressed through his negative acts.

As nothingness coiled in the very heart of man's being, Sartre says, man can never be limited to his past or present. Thus man not only negates his past, he also nihilates his present in order to achieve the end which he has in view. He constantly endeavours to reshape himself in the light of the end which is yet-to-be-achieved and he knows if once he allows himself to be stuck into his past, it would fall upon him like a dead weight and thus would hinder his future progress. So he outlives his past and present and tries to live in the future. In this constant upsurge man realises from the core of his heart that he is becoming estranged not only from his past and present but also from his own self at least to some extent. He realises that he is not a stamped factory product whose fate has been sealed forever, but is a 'being' characterized by an endless possibility and constant uncertainty. This fact of self-estrangement in man perhaps induces the existentialist thinkers to speak of frustration and anxiety as the prerogative feature of man's lot. But from this it is unjustified to conclude that existentialism is a philosophical attitude which merely points out the dark side of man's life. The existentialists have also drawn our attention towards the truth that this phenomenon of self-estrangement, which gives birth to anguish and frustration in man, acts at the same time as an impetus for him to move forward, to go ahead of himself. Thus the all-embracing nothingness in man acts as the road-finder for him, uncovering his being-as-freedom; he realises that he is an ever-elusive being and as such, through the hole (i.e. the sort of a cleavage) in his being he slips, as it were, through everything.

III

Here a very pertinent question comes to our mind: what is the nature of the consciousness as nothingness? Is it a pre-reflective or a reflective level of consciousness? In **Being and Nothingness** Sartre has described negation or nothingness, as a pre-reflective attitude, yet there are many traces in Sartre's writings where it is

shown that nothingness is not a mere object of pre-reflective consciousness since the full experience of it requires an act of reflection. There is no doubt that we experience nothingness as an ontological fact. A phenomenological analysis of consciousness has shown us that consciousness is always consciousness of something, hence when we experience nothingness in the outer world, 'nothingness' exists as an object of our consciousness and in this level our consciousness is undoubtedly pre-reflective. But Sartre has pointed out that this **ontological experience** of nothingness is produced by consciousness in the **activity of nihilation** which is a reflective act. As for example, when I experience the absence of my friend (which is the object of my consciousness of nothingness) in the library, I experience it on the basis of my 'nihilating act of expectation'. Having not found him there I became aware of his absence. He is absent for me alone because it is I who expect him there, there will be no question of my experiencing his absence, i.e. his non-being. Thus it is through my reflective act of nihilation (here the act of my expectation) the object of consciousness of nothingness (here the absence of my friend) is revealed to me as pre-reflective level of consciousness. Here we may recall the point raised by Thevenaz in his book **What is Phenomenology**¹¹. There he has clearly stated that if nothingness is not an object of pre-reflective consciousness, consciousness of nothingness requires a reflection in order to become conscious and in that case in a state of non-reflection, it would be unconscious of itself, but this is a sheer contradiction. Hence it is proper to say that the consciousness of nothingness in itself is pre-reflective and it is only by analysing this pre-reflective consciousness of nothingness that we can realise that an articulation of it requires the reflective act of nihilation.

In connection with nothingness another question crops up. Does Sartre by introducing the concept of 'nothingness' leave man in

11. *What is Phenomenology?* 4 basic essays by Puerre Thevenaz, edited with an introduction by James. M.Edie.Quadrangle books, 1968.

the sphere of alienation? Is man as nothingness completely alienated from the world of beings who are characterized by full positivity? We have seen that in his analysis of consciousness under the influence of Husserl, Sartre has outcast everything from consciousness, even the 'I' or 'ego' has been thrown out of the sphere of consciousness. Consciousness is not the ego—the ego is the 'object' of consciousness as it is the product of reflective consciousness. Thus by its nihilating acts consciousness is separated from ego as it is separated from all its objects. As everything is exterior to consciousness and is viewed as an 'object' of consciousness, consciousness is 'nothing'. In contrast to the consciousness as negativity, the world of beings stand as a positivity. The conscious human being, who is characterized by nothingness, realises that he is an incomplete being and in order to get rid of this incompleteness and uncertainty he wants to grasp the fullness of the world by desiring, possessing and acting upon the worldly beings. But this attempt to be identified with the world of beings remains forever unsatisfied on the part of the human consciousness or being-for-itself because his very being as nothingness prevents such sort of identification. From this it may appear that man as 'nothing' has been alienated from 'being-in-itself' which is a full positivity. But a closer scrutiny into Sartre's philosophy would reveal before us that this phenomenon of alienation is only apparent. Being-for-itself is not alienated from being-in-itself; rather there is a deep-rooted connection between them because it is only in contrast to the world of beings other than himself that man realises his 'being as nothing', i.e. his being as freedom. Thus the world of beings help him to realise the true significance of his being.

From the above exposition of man's 'being-as-nothingness' it is clear that the question of man's freedom is inseparably linked up with the analysis of man as nothingness. Man is free because of his inherent nothingness or 'lack'. In the words of Sartre: "Human reality is free because it is perpetually wrenched away from itself and because it has been separated by a nothingness from

what it is to what it will be''¹². Being characterized by a nothingness man escapes every sort of determination and indulges in forward-moving projects and is thus free.

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Kant on Aesthetic Necessity

Gopal Chandra Khan

The concept of necessity is much talked about in philosophy. However, in itself it does not mean anything; to be of any meaning it needs be qualified. Thus we talk of psychological necessity, logical necessity, causal necessity, moral necessity, and so on. Similarly, rhetoricians talk of a very special type of necessity, that is, aesthetic necessity with which we are not so familiar. In the present paper I would like to bring to your parliament this rather relatively obscure notion as explained and illustrated in Kant's third *Critique*, that is, *Critique of Judgment*.

Leaving aside Hegel, Kant is possibly the last great system-builder in philosophy. Three or four *Critiques* encompass his system. In the first *Critique* Kant says that there are three great questions of philosophy. They are—(1) What may I know? (2) What ought I to do? and (3) What may I hope for? In the *Logic* he supplements his previous list of great philosophical questions by the fourth one—Who am I? or, What is man? His philosophical system is built up around these four great questions of philosophy. The first *Critique* is purported to answer the first question—What may I know? The answer obtained there is—the domain of the concept of nature or the phenomenal world, also regarded by Kant as the world of appearance, is the world of actual and possible human knowledge or experience. However, the known and the knowable are not coextensive with the thinkable. We can think of such things as we do not know or can not know provided that our thought of them does not meet with self contradiction. Thus there is no logical incongruity in thinking that behind or beyond the phenomenal world there is a real and self-subsisting world, standing out there as the ground of appearances, but man has no knowledge of that intelligible world; that is the territory of the humanly unknown and unknowable, the noumenon. In the first *Critique* Kant explains that man's inability to find experiential access to the noumenal world is no disadvantage. On the contrary,

it is a real human prospect. Theoretical knowledge of supersensible objects, if it were possible would destroy not only our scientific knowledge but also morality. The unsearchable wisdom by which we exist is not less worthy of admiration in what it has denied than in what it has granted; it has created a ground for faith, and what we ought to do or our moral actions are grounded in moral faith. Similarly, it has created a ground for truly human aesthetic pleasure, which, too, is grounded in faith.

Kant's second *Critique*, that is, *Critique of Practical Reason* is purported to answer the second and third great philosophical questions — what we ought to do, and, if we do what we ought to do, then what we may hope for. They are the truly human or moral actions that we ought to do, and what we may hope for is the Summum Bonum. Moral actions are those that are caused by freedom, and the moral law is the law of that freedom. However, freedom is not to be met with anywhere in nature; it is noumenal. Yet moral actions are performed in the world or nature. That means, the noumenal world of freedom acts on the phenomenal world. Moreover, the moral ideal of the Summum Bonum presupposes that there is in man something noumenal to live by, that is the soul, and that soul is immortal. What is called freedom is freedom of the will, and the will is the will of the noumenal subject. The worldly man or the natural man is the soul incarnate, which is to say that in man the phenomenal and the noumenal stand in unison. Thus even though the noumenal is the territory of the unknown and the unknowable, man lives in diffusiveness of feeling for the noumenal self or subject in him. If man were entirely a phenomenal being then his moral sense would be an illusion, and it is likely that with the advancement of learning he would be completely rid of it. But that would be the greatest of calamity that might ever befall on humanity. The *Critique of Judgment* explains the ground for the possibility as well as the mode of self-realization, and thereby assures that the feeling of respect for the 'moral law within' is no trance of illusion. It, too, by connecting the phenomenal man with the noumenal in him seeks to provide

answer to the question, What is man? or, Who am I? What we call aesthetic necessity is the necessity with which the judging mind views the self, its non-phenomenal reality, its unity and identity, and its community with the rest of mankind in the wake of our experience of aesthetic pleasure. This aesthetic necessity is a species of what is sometimes regarded as transcendental necessity. Let us now see through Kant's text.

In the 'Introduction' to the *Critique of Judgment* Kant says that philosophy properly falls into two parts—a theoretical, as Philosophy of Nature, and a practical, as Philosophy of Morals. The former has as its realm the realm of the concept of nature, as the sensible, and the latter has as its realm the realm of the concept of freedom, as the supersensible. Between the two realms there is a great gulf fixed, so that it is not possible to pass from the former to the latter. Still the latter is meant to influence the former, that is to say, the concept of freedom is meant to actualize in the sensible world the end proposed by its laws. There must, therefore, be a ground of unity of the supersensible with the sensible. Thus Kant's critical philosophy feels the compulsion of investigating both the phenomenal and the noumenal directions of man, and as Kant says, the *Critique of Judgment* is a means of connecting the two parts of philosophy in a whole. At the same time, the third *Critique* is to fill up the lacunae or the shortcomings of the first two *Critiques*, specially those that are created by our lack of understanding of the transcendental self and the transcendental other selves.

In the first *Critique* Kant's critical enquiries into the grounds for the possibility of a priori knowledge as we meet with in different accomplished sciences led him to necessarily presuppose certain transcendentals about the human subject, all of which are noumenal, namely, the subject as sensibility, the subject as understanding, and the subject as reason. The *Critique of Practical Reason* necessarily presupposes yet another noumenal direction of the human subject, namely, the subject as will or the subject as reason-in-action. But are they so many noumenal subjects or so

many stems or elements of one and the same subject? The *Critique of Pure Reason* finds evidence for a unitary "I think" which necessarily accompanies all of my conceptual representations, and as Kant's critical enquiry unveils, perception, too, involves conception. There is also a suggestion that sensibility and understanding are two stems originating from the same root. But no evidence is given in favour of such a suggestion. The 'empty space' called noumenon indeed houses the diverse roots of the subject-in-itself, but in no way they are proved to be the roots of the same subject-tree. The *Critique of Judgment* explains that aesthetic perception, that is, taking disinterested delight in the perception of a beautiful object, is the expression of the realization of unity and harmony of the sensuous and intellectual faculties of the mind. That means, aesthetic perception brings in self-realization in respect of self-unity. The self-realization due to aesthetic perception also brings in realization of the subjectivity in others, that all the selves form a community in the noumenal "space". Thus if the moral law necessarily leads to the concept of the "kingdom of ends", then the "census communis" of aesthetic perception provides the ground for the possibility of such a kingdom. Really, moral necessity is the other face of aesthetic necessity, and the feeling of respect for the moral law is the analogue of the disinterested delight of aesthetic perception. Let us explain this idea of necessity from Kant's "Analytic of the Beautiful" as in the first half of the first part of the *Critique of Judgment*.

The main theme of the "Analytic of the Beautiful" is the development of an exposition of the kind of judgement which expressions such as "This is beautiful" is used to make. In the first place, Kant explains that the judgement of the beautiful is one type of reflective judgement. A reflective judgement is different from determinant judgement. The function of determinant judgement, as has been explained in the *Critique of Pure Reason*, especially in the chapters on Schematism, is to apply universal rules or concepts given by the understanding to particulars given by intuitions.

Reflective judgment has an altogether different function. Where the particular is given by intuition, but no universal, concept or rule is available under which to subsume the given particular, the universal has to be found for it, and the judgement becomes reflective. For example, the judgment 'The Taj is made of white marbles' is determinant judgment. It says something about the substance, quality, etc, of the object Taj. But the judgment "The Taj is beautiful" is reflective judgment, for beauty is not any one of the categories like substance, quality, etc. which applies to the Taj? It expresses a feeling, but feeling is not a determination of the object Taj. It expresses the state of mind of the person that makes the judgment. To be less technical about, in a reflective judgment the object judged serves, as it were, like a looking glass which shows not itself in its qualities but the image of the object other than itself that is placed before it. In so far as the reflective judgement is teleological it reflects the image of a remote intelligence, and in so far as the reflective judgment is one of taste it reflects the state of mind or the state of the subject that makes the judgment. In the second place, the judgment of the beautiful being one 'kind of reflective judgment, is purposive. The purposiveness in it is subjective. It means that the judgment of the beautiful serves the purpose of the subject that makes the judgement, and the feeling of pleasure of joy is due to the satisfaction or the fulfillment of the purpose. Now, a purpose may be either mundane or non-mundane. Since in making judgment of the beautiful the judging mind does not take any interest in the object, the purpose in it is non-mundane. This is expressed by saying that an aesthetic judgment is purposive without a purpose. The non-mundane purpose served in an aesthetic judgment is self-realization, and the pleasure associated with it is the non-mundane pleasure due to self-realization.

In the "Analytic of the Beautiful" Kant identifies four points in a judgment of the beautiful which are elaborated in four "moments", each with its own definition and necessary presupposition. These definitions, in Kant's own words, are : (1)

Taste is the faculty of estimating an object or a mode of representation by means of a delight or aversion apart from any interest. The object of such a delight is called beautiful. (2) The beautiful is that which, apart from a concept, pleases universally (3) Beauty is the Form of Finality in an object, so far as perceived in it, apart from the representation of an end. (4) The beautiful is that which, apart from a concept, is cognized as the object of a necessary delight.

The first thing that the judgment of taste discovers is that when we call an object beautiful we are not at all concerned with the existence of the object as such, but with the pleasure or delight which we feel when we represent it to ourselves. Shorn of its concern for the existence of the object in reference to which the judgment is made, the delight of the judgment of taste is disinterested delight. Disinterested delight is sharply to be distinguished from delight in the agreeable as well as delight in the good. The latter two varieties of delight involve interest in the existence of the object and desire for its possession. A judgment of taste is made of an object without any thought of its utility or use to the person who makes the judgment.

Consequently, as the Second Moment explains, the beautiful is represented as the object of a universal delight. Since the delight is not based on any inclination or deliberate interest, but the subject feels completely free in respect of the liking which he accords to the object, he can find as reason for his delight, no personal conditions to which his own subjective self might alone be party. Therefore, he naturally presumes that the object will be judged in the same manner by everyone else. He is aware that his judgment is quite independent of his individual likes and dislikes. Owing to this he will speak of the beautiful as if beauty were an objective quality, and he will formulate his judgment as if it were a logical or cognitive judgment. He will do so because there is a resemblance between the two judgments, aesthetic and logical, in that they both claim to be universally valid. However, the universality of the judgment of taste must be of a very special kind. The universality

claimed in it is subjective. The subject of the judgment does not demand that everyone should attribute the same properties to the object; it merely demands that everyone will have the same subjective feelings about it. Simply speaking, in making a judgment of taste the feeling taking place in the heart of an individual is impersonalised, and thereby, universalised.

But what is the ground for the possibility of an individual getting delighted at the perception of an object in which he is not interested in its mundanity? And, how is it that such delight is universalised? Further, supposing that an individual is delighted in this way and he also thinks that the delight is universal, is there any necessity about it? The birth of aesthetic joy, its universality and necessity, according to Kant, rest on *a priori* grounds. Those *a priori* have been worked out in the third and the fourth moment of the analytic.

So far Kant has explained that our judgments of taste claim universal and *a priori* validity and that they depend entirely on the pleasure which is felt by the subject. However, since the subject does not take any interest in the object, it seems impossible to determine *a priori* the connection between a feeling of pleasure as an effect and the object represented as the cause. Judgments of taste are really contemplative judgments. Yet not just by thinking can we experience aesthetic joy. Aesthetic joy or aesthetic feeling is a kind of sensation, and in order to have that sensation an object must be given in sense perception. The object of perception, whatever it may be, has its generality as well as speciality. We take interest in the object in respect of its generality, that is, object-as-object. The object-as-object is just the form of the object, and the *a priori* ground for the possibility of its awareness is the harmony of our faculties of representation, namely, imagination and understanding, and the consciousness of this harmony is aesthetic joy. In short, aesthetic joy is due to self-realisation, the realisation of the unity and harmony of the sensitive and intellectual faculties belonging to the same subject, and as Kant has already explained in the *Critique of Pure Reason*, human

knowledge is the joint product of the sensitive and the intellectual faculties of the mind.

Now, aesthetic joy is not simply the feeling which arises from an awareness of the harmonious play of the cognitive faculties of the mind, it is also universally communicable. When we call a thing beautiful we imply that everyone ought to agree with us, that is, everyone also ought to call it beautiful. We assume that it is subjectively necessary for everyone to assent to our judgment; and if they do not we say that they ought to. This "ought" implicit in a judgment of taste is aesthetic necessity which is very different from the necessity of either cognitive or moral judgments. For, an aesthetic judgment is made exclusively on the basis of joy felt by the subject, and no concept, and thereby, no rule, is made use of. There is really no rule in accordance with which something may be impersonally judged as either beautiful or not. It follows that the necessity which belongs to our judgment of taste cannot be apodictic. It is subjective necessity, or what Kant would say "exemplary necessity". Something is an exemplar if it is an instance of a universal. In the present case, the universal is what Kant says "common sense" by which he understands not any outer sense but the effect resulting from the free play of our cognitive faculties. When I realise this subjective aesthetic ground in me, I realise, as if I see, the common human ground. Through an aesthetic vision of the common human ground in me I also see others in respect of their subjectivity. This vision of the common human ground is really the ground, rather compulsion, of regarding the humankind as the 'kingdom of ends'. As a worldly man busied with the objects and take interest in them. I am different from you, from him and from others. But in moments of aesthetic joy I also realise that as a transcendental human subject I and you are not so different from each other, for we share in the same humanity, as if we live together in the same body.

Psychologism, Necessity and Indian Logic

Nirmalya Narayan Chakraborty

The present essay is an attempt to explore the issue whether Indian logic is psychologistic in nature. With a brief account of the debate regarding psychologism in the context of Western philosophy, I shall try to argue that one can give an account of Indian logic that does not succumb to psychologism. In the next step, I will try to show that Indian logic could be said to involve the idea of necessity, but it must be cautioned here that this Indian notion of necessity is different from the idea of logical necessity that we find in the Western philosophical tradition. If we can make a distinction between the source and justification of the idea of necessity, then perhaps one could argue that in so far as the justificatory aspect is concerned, Indian logic could be said to involve necessity but, of course, in a qualified sense.

The very term 'Indian logic' is problematic. 'Logic' in the Western context stands for a theory of valid arguments. In this sense, 'Indian Logic' could mean Indian theory of inference (*anumāna*). '*Anumāna*', the Sanskrit word for inference, etymologically means some knowledge that follows from some other knowledge ('*anu*' meaning follows and '*māna*' meaning knowledge). Looked at this way, a theory of inference is a part of a theory of knowledge. When Frege assigns the task of discovering the laws of thought to logic, he means (1) Laws of logic are descriptive (as opposed to prescriptive) in nature; and (2) Laws of logic describe not the mental processes of thinking, but something that Frege calls '*thought*'. Frege argues in detail to show how *thought* is different both from mental ideas and things in the world. *Thought* belongs to a third realm, Frege concludes. If we look at the Indian theory of inference, we see that Indian logic is descriptive in nature, i.e. it describes the various steps involved in drawing an inference. But then what Indian logic describes is not Fregean *thought* that belongs to an ontological category which is different from mental ideas and things in the

external world. Indian logic is characterised by the conspicuous absence of the notion of *thought* or *proposition*.

In order to see what Indian theory of inference describes, let us take a closer look at the inferential process according to the Nyāya school. First, a person *sees* smoke in the hill. Second, assuming the person has the prior knowledge that wherever there is smoke there is fire (this is exemplified by the presence of fire in the stove in the kitchen), she *remembers* the universal correlation. Then this memory makes her *see* the smoke *as* that with which fire is present. And this leads to the conclusion that the hill possesses fire. Notice, the description of the inferential process is given in terms of mental events like seeing, remembering etc. And these mental events occur at a particular time in a particular person. On this account, there is a chain of mental events where one is the cause of another under suitable conditions. There is also a discussion of the conditions that are required to be present for the inferential process to take place. This is discussed under the title *pakṣatā*. Ignoring all the minute details for present, two variables are important for the process of inference to take place viz. (1) the presence or absence of the desire to infer in the person, and (2) the presence or absence of prior certainty (about the conclusion of the inference). Of the total four possible combinations of these two conditions, only one precludes the possibility of the inferential process to take place. If there is absence of desire to infer in the person, and there is also prior certainty in the person about the conclusion, then the person will not infer. So, the suitable condition for the inferential process to take place is the absence of the conjunction of the absence of the desire to infer and prior certainty. The point worth noticing in all these is that the whole account of inferential process is given in terms of psychological conditions of the person who is inferring. Description of the mental process involved in drawing an inference is the main aim here.

Another important feature of Indian theory of inference could be seen if one looks at the five members in an inference admitted

by the Nyāya school. It should, however, be remembered here that if one wants to draw an inference for oneself, she does not need to go through this five-membered process of inference. It is only when one wants to persuade another, the most effective strategy is to go through all these five members of an inference. These are as follows:

- [1] The hill possesses fire [*pratijñā*]
- [2] Because it possesses smoke [*hetu*]
- [3] Wherever there is smoke there is fire, for example, the stove in the kitchen [*udāharana*]
- [4] The hill is like that (possesses smoke that is universally so-present with fire) [*upanaya*]
- [5] Therefore, the hill is like that (i.e. it possesses fire) [*nigamana*]

Using *modus ponens* of Western logic, one can get the conclusion simply from [2] and [3]. But in the context of persuasion, other steps are also required. [1] and [5] look almost the same, but the first cognizer herself knows the truth of [1] of which the interlocutor is not sure. After persuasive arguments, the interlocutor knows the truth of [1] in [5]. So, for the interlocutor [1] gets asserted in [5]. Also, the difference between [2] and [4] is that [4] is an application of the universal principle enunciated in [3]. The fourth step claims that the hill possesses smoke not *per se*, but smoke as that with which fire is universally present. On this account, all these five steps are necessary; for in this chain, one cognitive step facilitates the following cognitive step.

Two points stand out in this theory of inference. First, the entire account is given in terms of mental events that take place in the mind of the interlocutor. The internal consistency of the inferential process is guided by the norms of cognitive psychology. Second, this whole inferential process is taking place against the background of a dialogical context where one person tries to convince the other of the desired conclusion. The inferential process aims at proving something to some other person. This process was often followed in the cases of disputes or debates.

From the above discussion, it is quite clear that Indian theory of inference is heavily couched in psychological terms. It is also evident that the account of inference that is found in Indian philosophy is different in a significant sense from that one can find in Western logic. Acknowledging this distinctive feature of Indian logic, can one label Indian Logic as psychologistic? Let me say a few words about psychologism and opposition to it in the context of Western philosophy. For the past one hundred years or so, the term 'psychologism' has been used to refer to a number of philosophical follies. Accordingly, this term has gained a derogatory connotation. Many philosophers have been accused of advocating psychologism. Some of those alleged psychologistic philosophers tried to prove themselves innocent by showing that they do not entertain psychologism in their philosophies. Nicola Abbagnano¹ tells us that the term 'psychologism' was first used to refer to a philosophical movement that was opposed to Hegelianism; according to which, the only method of philosophical inquiry is introspection and there is no way of establishing a truth other than relating it to the subjective experience of self-observation. Edmund Husserl, while explaining what the term 'psychologism' means in Brentano², says that it means a theory which contests the general validity of knowledge, a theory according to which beings other than man could have insights which are precisely the opposite of our own. Accordingly, many philosophers think that psychologism gives a subjective or mental explanation of the nature of the concepts of truth, validity and knowledge. A look at the debate between psychologism and anti-psychologism shows that this is actually a debate about the role of subjective, introspective experience in the philosophical analysis of concepts.

Among the many important philosophers of the Western tradition who opposes psychologism, Frege is perhaps the most important figure. In the Introduction to his *Grundlagen*³, Frege mentions three guiding ideas that lead him to write the book, which are: [1] not to confuse logical with psychological, [2] not to lose sight of the distinction between concept and object, and [3] never

to ask for the meaning of a word is isolation. From Frege's writings, it is possible to construct anti-psychologistic arguments with regard to logic, meaning, mathematics and epistemology. Without going into a detailed analysis of every variety of psychologism and Frege's opposition to each of them, the main point that Frege seems to be making is that the task of logic is to discover the laws of truth; and the laws of truth are not formed out of generalizations of how we come to believe a proposition. Psychological laws may accompany human reasoning, but they are not what we aim at when we discover the laws of logic, for the psychological laws are relative to our present thought-scheme and subject to change, whereas logical laws are not relative to time, place or users. Psychological laws are concerned with a person's *taking* a proposition *to be true*, while logical laws are concerned with a proposition *being true*. When we do logic, we do not study a person's subjective history of acquisition of beliefs in certain propositions—what we do is that we discern the laws governing the relation between those propositions. So, psychologism in logic simply changes the subject matter of logic. Thus, for Frege, logic does not describe the mental process of reasoning; and psychological laws are of no relevance to the discovery of logical laws. It is evident in Frege's thinking that Frege's opposition to psychologism leads him to a Platonic view of thought that belongs to a third world, which is neither mental nor material. But then, on the other hand, Frege's description of logic seems to be quite in tune with the way logic has historically developed. Is there any middle path where one is not forced to subscribe to some kind of Platonism, and at the same time, one does not also lapse into vulgar subjectivism?

A reconstruction of Indian theory of inference *a la* J.N. Mohanty⁴ could be of help here. In this interpretation, we are talking about inference in terms of mental events, but here a mental event exemplifies a universal structure in the sense that two mental events can illustrate the same structure. When we talk of mental event or act, there is always a reference to a self, where that mental act or event occurs. And ofcourse it has a temporal reference. There

is a particular point in time when that mental event/act takes place. We can also talk about the act-nature, and by 'act-nature' I mean that the act could be perception or memory etc. And last, but not the least, there is the content of the act. This content is clearly not the object lying there outside in the world. It is best understood as the intended object of the mental act. Now, the structure of the content may change according to how the external object is presented in the act. In the example 'nīlo ghaṭaḥ' (This is a blue jar), the primary object is jar and blue colour is the qualifier. In the example 'ghaṭasya nīlam' (The blue (is) of the jar), the primary object is the blue colour which is perceived as belonging to the jar. The epistemic entities like qualifier, qualified etc. do not belong to the objects in the world *per se*. They float in the structure of the content of the knowledge. These entities and their structures are universal in the sense that many cognitive acts or events may illustrate the same structure. In Indian theory of inference, we can be said to deal with this structure of a cognitive act that is universal. On this account, two cognitive acts can be said to be identical if they have the same act-nature and exemplify the same content-structure. Viewed in this way, the references to the owner of the mental act and the time when the act takes place are irrelevant. Here, we are giving an account of knowledge in terms of mental act, but it does not land us in the realm of the subjective that the anti-psychologistic philosophers thought it would. Thus, one can very well argue that Indian logic (Indian theory of inference) *does* involve the idea of the mental, but nonetheless it *does not* lead to psychologism in the sense in which it has been used in Western philosophy.

In the light of the brief account of Indian theory of inference given above, we can now look at the ideas of necessary and contingent truths in Indian logic. Usually logical truths are treated as necessary truths. They are true by virtue of their forms. They are analytic. Factual truths are contingent. They are true by virtue of what happens in the world. Setting aside the question whether this distinction between necessary and contingent truth is ultimately

tenable, in the present context the more significant query concerns the presence or absence of the idea of necessity in Indian logic. If Indian theory of inference is formulated in terms of mental acts, then can we talk of logical necessity, in Western philosophical sense, playing any role in such a theory? One can talk of different kinds of necessity: [1] logical necessity, [2] essential necessity and [3] causal necessity. Logical necessity is the necessity that could be said to hold between sentence-forms. This is the kind of necessity that we find obtaining among different propositions in logic in Western philosophy. One must note, however, that not all necessary truths are logical ones; though certainly the reverse is true. Essential necessity is expressed in the laws that are grounded on the essences of the things concerned. If one accepts this kind of necessity, then these laws are, though necessary, not analytic. One could also talk of causal necessity, where the relation holds between cause and effect.

From the above presentation of Indian theory of inference, it is natural to conclude that this theory involves the idea of causal necessity. In Indian formulation of the inferential process, causal necessity can be said to hold between the sequences of mental episodes leading to the conclusion of the inference. In Indian formulation, the structure of 'inference for other' (*parārthānumāna*) is presented in such a manner that the cognitive episodes expressed in the corresponding sentences do exhibit a causal structure; where each mental act is bound to produce the following mental act, provided the required conditions are fulfilled. The important question that we face here is: Can we ascribe non-causal necessity to Indian theory of inference? One problem that arises immediately following the ascription of logical necessity to Indian theory of inference is that logical necessity is said to hold between propositions, and Indian logic lacks any such concept. Instead, what we find in Indian theory of inference is the division between 'inference for oneself' (*svārthānumāna*) and inference for others (*parārthānumāna*). In inference for oneself, the inferential process involves an internal mechanism, where one cognitive

episode is necessarily followed by another. In the case of inference for another, the external mechanism is expressed in terms of sentences or utterances of them, where each of these sentences/utterances is necessarily followed by another. This leads Bimal Krishna Matilal to suggest that in the internal case, “logic appears to be psychologized while in the second it is linguisticized”⁵. And he further claims that in either case, causal necessity is superimposed on what is called logical necessity. Matilal’s argument for ascribing logical necessity to Indian theory of inference is that when it is said that if A is a sign (*liṅga*) of B, and if we assert A of something, then we must assert B of it. Internally, it is viewed as a causal sequence of mental cognitive events like seeing A in a particular case combined with another cognitive episode of remembering that A is the sign of B etc. The combination of these episodes is called *parāmarśa*, and it is said that if there is *parāmarśa*, then the conclusion will necessarily follow. This causally necessary consequence is also a logically necessary consequence, according to Matilal; for to the question what would happen if the person gets distracted or falls asleep immediately after the appearance of *parāmarśa*, the answer would be that though the concluding cognitive episode would not follow, this psychological contingency would not undermine the logical necessity of the conclusion that follows from the prior cognitive episodes. The failure of the conclusion to appear is due to some non-logical factors. Even in the external mechanism of inference, when it is said that if the sign (pervaded or *vyāpya*) is there, the signified (pervader or *vyāpaka*) is necessarily there, the principle is couched in non-psychologistic terms. It is true that we identify a sign as a logical sign, i.e., sign that warrants inference through empirical method, but then a sign is thus identified only if its presence necessarily signifies the presence of the signified—thus concludes Matilal.

There could be several responses to Matilal’s attempt to find logical necessity in Indian logic. First, one could suggest that there is hardly any opposition between causal and logical necessity. In

inference for oneself, we find causally necessary connection; while in the inference for other, we find logically necessary connection, and these are just two sides of the same coin. Viewed in is way, the charge against psychologism gets rather weak, because there remains no unbridgeable gap between the psychological and logical. One could move further and claim that the idea of logical necessity can be derived from that of psychological necessity. One might go on claiming that psychological necessity is the fundamental one on which other kinds of necessities rest. Once makes a distinction between source and justification of necessity, one can very well claim that if we think of the source of necessity, then we will fall back on psychological necessity. But if we are interested in the justification of necessity, then we can think in terms of logical necessity, for it is in logic that we take up justificatory questions regarding our inferential knowledge. Matilal, it seems to me, is siding with the claim that logical necessity gives rise to psychological necessity; and Matilal cites evidence for this claim from Indian theories of inference, especially, the Nyāya and Buddhist ones.

Let me toy with a rather radical idea, viz., psychological necessity is *all* that is there. If this is acceptable, then the very motive behind Matilal's attempt to find logical necessity behind the talk of psychological necessity in Indian theory of inference might seem to be wrong-headed. Let us take a close look at the use of the word 'necessarily' in our language, preferably English.⁶ If people thought that almost everything that happened in the world happened by necessity, or if people thought that almost nothing in the world happened by necessity, then we would have very little occasion to use the word 'necessarily'. Often we use 'necessarily' to talk about future events, like 'If a polluting industry is built here, then the local inhabitants are bound to be hostile', meaning thereby that they will necessarily be hostile. We use words like 'bound to', 'surely' and 'must' as synonymous with 'necessarily'. We use these necessity idioms also to talk about the past and present, like 'As a Chief Minister, he must have enriched himself'—meaning that

he necessarily did—‘for look at his earlier record as an M.L.A.’ Notice that we use the word ‘necessarily’ or its synonyms where we are less than sure of the facts. When we are sure, we just affirm without any intensive adjective. This is indeed paradoxical. But then ‘necessarily’ is not always a rhetorical device to cover up our uncertainty. When somebody is told, while looking for a leopard in a jungle, ‘Necessarily it will have spots’, other than viewing it as a prediction, this utterance could also be viewed as a conditional sentence of the form ‘If it is a leopard, then it has spots’. Here, there is no rhetoric involved. All these examples show that necessity is a matter of connection between facts, and it is not concerned with facts taken separately.

Now, what does make connection a necessary one? To take the example of leopard, when the arrival of some leopard is announced, we expect an animal with spots. What is the connection? We have the knowledge of the general truth that all leopards have spots. The only answer to the question why the newly arrived leopard should have spots is that all leopards have spots. One can take some more complicated examples, but I guess the answer would be the same. One must not interpret it as claiming that a person is entitled to apply ‘necessarily’ as long as she thinks that there is *some* general truth that subsumes the present one. That would make it possible to apply the phrase ‘necessarily’ to everything, and then the term would lose its significance. What is important is that the person has some one actual generalization in her mind that she thinks subsumes the present one, and whose truth is independent of the particular case in hand. Two points stand out here. First, the adverb ‘necessarily’ applies rather to whole conditional connections, and not to particular events or states. Second, the application of ‘necessarily’ requires an allusion to some generality that subsumes the case under consideration.

One of the cases where the term ‘necessity’ comes under close scrutiny is the case where we explain the dispositional terms like ‘soluble’. To claim of a particular lump of stuff that it is soluble is to claim more than that whenever it is in water, it dissolves;

for the particular lump might never be in water. For a lump to be soluble, we must be able to claim that if it *were* in water, then it would dissolve. Clearly what we need here is an 'if-then' formulation guided by necessity. With the knowledge gained from Chemistry that gives us the details of the sub-microscopic structure of the lump concerned, we equate these explanatory traits with solubility. What is true of the dispositional terms like 'solubility' could very well be true of subjunctive conditionals like 'If x were treated like this, then it would do so and so.' One could always come up with a set of explanatory traits, sometimes with the help on an expert, to explain the conditional. These conditional sentences may or may not explicitly contain the adverb 'necessarily'; nonetheless, the subjunctive form connotes it. The point worth noticing is that the necessity constructions rest on generality, and the generality can be explained in terms of certain traits that the relevant theory can tell us.

How is one going to explain what is called 'logical' or 'mathematical necessity'? These varieties of truths are called necessary, because they are true by definition. Imagine a physicist, who is confronted with an experimental finding that goes against her professed theory. She has to change her theory at some point to inactivate the false prediction. And the normal practice in scientific community is to modify or change the relevant concepts in such a manner that the apparently false prediction can well be accommodated within the theory. Definitions are not something as sacrosanct that they can never be altered. They are also susceptible to changes like other sentences. As theoretical and experimental physics do have the same content and differ in motivation and application, so also pure mathematics (dealing with logico-mathematical truths) and physics differ only in motivation, but not in their content. If this is true, then logical necessity is stripped of its privileged status, and the only necessity that one can talk about is the necessity resting on generalization, which in its turn is explicable in terms of empirical traits. So the real burden that the idea of necessity is to bear is shouldered by empirical necessity.

Empirical necessity is all that we need in order to have science, including Indian theory of inference. When this empirical necessity gets floated in knowledge, what we get is necessity among the different cognitive episodes. And this is precisely what we have in Indian formulation of inferential knowledge. Let us not split hairs in trying to find out the idea of logical necessity in Indian Logic.

Notes and References :

1. *The Encyclopedia of Philosophy*, ed. Paul Edwards, Macmillan Publishing Co., New York, 1967, vol. 6, p. 520.
2. See Franz Brentano's *Psychology from an Empirical Standpoint*, Humanities Press, New York, 1973, p. 306.
3. G. Frege, *The Foundations of Arithmetic*, trans. J.L. Austin, North Western University Press, ILL., 1980, p. x.
4. J.N. Mohanty, *Reason and Tradition in Indian Thought*, Clarendon Press, Oxford, 1992, p. 108.
5. Bimal Krishna Matilal, *Logical and Ethical Issues of Religious Belief*, University of Calcutta. Kolkata, 1982, p. 134.
6. For the ideas expressed in the following paragraphs I draw heavily on W.V. Quine's 'Necessary Truth' in his *The Ways of Paradox and other Essays*, Harvard University Press, Cambridge, Mass., 1976.

Necessity and Contingency in Indian Philosophy

*Nirmalya Guha**

First of all, I must stipulate the meanings of 'necessity' and 'contingency' as used in this paper. A necessary proposition is that which must be true. There are similar ideas in Indian Philosophy. I would like to show that, the necessity-contingency dichotomy is absolutely relevant in Indian Philosophy, though it has been conceived in a very different way than the Western Philosophers have understood it. That which is represented by a 'necessary' statement is known through Postulation or *Arthāpatti*.

A few Relevant notions

Indian Epistemologists do not talk about propositions; they talk about cognitions (*jñāna*). Verbalized cognition is the unit of Indian Epistemology. Professor J.N. Mohanty has rightly shown that a verbalized cognition is 'propositional' despite not being a proposition.¹ In Indian Philosophy, the difference between Epistemology and Metaphysics has not been explicitly stated. But still, there is an implicit methodology to distinguish between them—A metaphysical truth (*prameya*) is determined by an epistemologically valid, (i.e. veridical) cognition (*pramā*). The content (*viṣaya*) of veridical cognition is a metaphysical truth. When somebody says 'Proposition P is necessary', her statement can be roughly translated as 'The content of the cognition C (which can be represented by P) must be true'. The Sanskrit word '*avaśyam*' can be roughly translated as 'must'.

Necessity in Indian Philosophy

The Mīmāṃsaka and the Advaitin accept Postulation (*arthāpatti*) as an independent instrument of veridical cognition (*pramā*). Now what is this Postulation? Postulation is the apprehension of a cognition C_2 which is related to another cognition C_1 in such a way that denying C_2 while accepting C_1 will be contradictory. Here C_1 is the instrument of attaining C_2 ². In Sanskrit, C_1 is

called '*upapādyajñāna*', and C_2 '*upapādakajñāna*'. My supervisor Dr. Chakravarthi Ram-Prasad and I were wondering if we could call C_1 'consistenendum' and C_2 'consisteniens', since C_2 shows the consistency of C_1 . Anyways, for the sake of convenience, here onwards I shall call '*upapādyajñāna*' 'premise-cognition' and '*upapādakajñāna*' 'derived cognition'. A few classical and modern examples of Postulation can make the picture a little clearer:

- (1) A person is alive and is not here. So he must be somewhere else; otherwise he cannot be alive.³
- (2) P implies Q, and Q implies R. So P must imply R.⁴
[Hypothetical Syllogism].
- (3) A three year old girl came to know that she would celebrate her fourth birthday in India. From that she postulated 'I must reach India before my fourth birthday'.

The first two Postulations are often used by the Indian philosophers, though in a little different form. And I am a witness of the third case. In each of these three cases, the first statement, the derived cognition (i.e. *upapādyā*) and the second statement represents the derived cognition (i.e. *upapādaka*). One must accept that there is a certain relation between the premise-cognition and the derived cognition in each case. But why should we say that any Postulation is 'necessary'? Because a Postulation must be true: since its denial results in a contradiction. So any Postulation has the following form: **An entity having the property x must have the property y too; otherwise there would be a contradiction.** In Sanskrit, we can say '*etaddharmavati taddharmah avaśyaū bhavati, anyathā anupapatteḥ*'. In terms of this formulation, (2) can be restated as: An entity having the property of implying Q which in turn implies R, must have the property of implying R; otherwise it cannot imply Q.

I have already shown in which sense I am using the word 'Postulation'. Now the question is: What does Postulation do? Why do we need Postulation at all? A traditional answer is: The derived cognition is not supported by any direct knowledge. That 'not supporting' is described as a disagreement (*adrṣṭivaimatya*).

Postulation destroys that disagreement, and makes sure that the derived cognition is true⁵ provided the premise-cognition is true. Probably Postulation can be compared to 'relative necessity'. Let 'Caitra is alive and is not here' be my premise-cognition. From that, I can postulate that Caitra must be somewhere else. Now, I do not perceive Caitra 'somewhere else'. This is the 'disagreement' I referred to. But Postulation itself destroys the disagreement, since if the truth of the derived cognition is not admitted, then the premise-cognition that has been accepted to be true cannot be true. Thus there is an inconsistency (*anupapatti*). In his *Khaṇḍanakhāṇḍakhāḍya*, Ācāya Śrīharṣa writes: "Postulation destroys the fear of being contradicted by any direct knowledge. So it is the strongest epistemic instrument"⁶.

We can compare Postulation to some other forms of veridical cognition, and see the difference. Let us first consider a perceptual cognition 'This is a snake'. However, much justification I may get in favour of the validity (truth is also a necessary condition for epistemic validity) of this cognition, nothing ensures that it must be true. It can very well be an illusion. For example, it can be another animal that looks exactly like a snake. What the Advaitin and the Mīmāṃsaka believe to be a postulation is considered to be an Inductive Inference (*anumāna*) by the Naiyāyika. According to the Naiyāyika, both 'the case of somebody's being somewhere else' (i.e. 1)) and 'a smoke-fire case' belong to the same category. If somebody has a doubt having the form 'whether something having smoke has fire too; or not', her doubt can be removed by the *reductio* argument (*tarka*) 'If fire is not there where smoke is, let fire (which is known to be a necessary condition for smoke) not be a necessary condition for smoke'. But nobody can deny that fire is a necessary condition for smoke. So any locus of fire must have smoke. Likewise, if anybody has a doubt having the form 'whether somebody who is alive and is not here must be somewhere else; or not', her doubt can be removed by the following *reductio* argument: 'If somebody who is alive and is not here is also not somewhere else, then she is not alive'. The contradictories are

shown in bold letters. In the smoke-fire case, the *tarka* is pregnant with experiential content. One has to experience that fire is a necessary condition of smoke in all the cases observed. So there is always a risk of over-generalization, since the observation cannot be exhaustive. This we can call 'cognitive non-closure'. In case of a perceptual cognition, this risk is the possibility of its being illusory. It is not necessary that fire be a necessary condition for smoke. It is not necessary that a perceptual cognition be true. But in case of Postulation, the *tarka* is pregnant with self-contradiction (*vyāghāta*). This is a strong *tarka* that involves logical impossibility or (sometimes) semantic impossibility. The strength of such a reasoning can be called 'cognitive closure'.

Postulation is not merely the attainment of the derived cognition; it is the attainment of the derived cognition as having a necessary relation with the premise-cognition.⁷ Actually the denial of this relation results in an inconsistency. In Sanskrit, this relation is called '*upapādyā-upapādaka-bhāva*' which we may call 'cognitive relation'. Postulation is a functional mapping between ideas. Thus 'being alive and not being here' is mapped to 'being somewhere else'; 'celebrating the fourth birthday in India' is mapped to 'arriving India before the fourth birthday' and so on. It may be a one-to-many mapping. But in each case, the guiding principle (*niyāmaka*) is: The denial of any mapping (i.e. affirming that, there is no such relation between the premise-cognition and the derived cognition) will result in a contradiction. This is the 'necessity' of Postulation. We can once again discuss 'cognitive closure' in terms of this cognitive relation. In case of Postulation, there is a sense of completion which is not really there in any other cognitive process. In case of Inductive Inference or *anumāna*, if I deny that 'all the loci of smoke are included in the loci of fire', then I contradict what I have already hypothesised (i.e. fire is a necessary cause for smoke) on the basis of my perception. But this perception of mine is also not complete. So, the non-closure remains here. So is the case with perceptual cognitions; no amount of justification suffices to 'prove' the validity of a perceptual cognition. In case

of Postulation, the contradiction is a logical (or essential) one, and I do not move any farther when I arrive at it. That stoppage actually generates the completion. So the stoppage does not depend on any other closure, since that itself is the closure; when we stop at some contradiction (by denying the hypothetical Cognitive Relation), we think that we have apprehended the Cognitive Relation as a whole.

That which is known through Postulation (*arthāpattimeya*) must be true, since it is impossible to accept the denial of that to be true. In order to justify a perceptual cognition, another cognition is required and ad infinitum. In order to justify an Inductive Inference, we have to refer to some perceptual evidence, which is once again not complete. But in case of Postulation, only one justification is required; that is the self-contradiction caused by the denial of the Postulation. In fact, the relation between the premise-cognition and the derived cognition is affirmed by this self-contradiction.⁸ Thus Postulation has the absolute (phenomenal) validity, whereas all other cognitions have only provisional validity. In the Advaita framework, we can say: Except Postulation, any cognition can be contradicted by another cognition. So there can be a disagreement (*vaimatyam*) or incoherence between cognitions in this case. But in case of Postulation, the disagreement is destroyed by the epistemic process itself, since the denial of the Postulation is contradictory. Except Postulation, any other (true of false) cognition can be represented by a contingent statement.

The denial of a proper mathematical inference results in an inconsistency. If the sum of all three angles of a Euclidean triangle is not equal to 180° , then the figure under consideration is not a triangle. Thus there is a contradiction. So, in order to avoid that, we must accept that the sum of all three angle of a Euclidean triangle is equal to 180° . I personally believe that the mathematical truths also are to be attained through Postulation.

Most of the Indian Epistemologists do not consider the analytic truths or tautologies to be epistemologically valid, since in such cases what is attained is already contained in that through which that has been attained. This is merely 'the knowledge of the known'

(*anuvāda*), and in Indian Epistemology, it has no significance. Postulation is not merely 'knowledge of the known' since the derived cognition is by no means contained in the premise-cognition. I may know the meaning of 'implication'; I may know what is meant by 'Q implies S' and 'P does not imply S'. But I may not be able to know that 'P, which does not imply S that is implied by Q must not imply Q'.⁹ So the necessary relation or mapping between 'Q implies S, and P does not imply S' and 'P does not imply Q' is to be 'discovered'. This is the novelty (*anadhigataviṣayatva*) of Postulation.

Perhaps Postulation or Arthāpatti does not only apprehend the content of 'necessary propositions'; it does something more. Let us look at the Verbal Postulation or *śrutārthāpatti*. When a normal person with proper linguistic ability utters 'Close!' means 'Close the door'. If this is not postulated then the linguistic ability of the speaker will be doubted. But the hearer does not doubt that. In order to remove this inconsistency such a postulation is needed. Here there is no logical contradiction. Hence this may not be considered a case of logical necessity. But still, there is sort of an essential contradiction here. I wonder if there is something like 'semantic necessity'!

I think, in the Advaita epistemological language we can very well describe the epistemic mechanism of Postulation. The Ignorance (*avidyā*) hides an entity with two covers, (i) the existence-cover (*asattvāpādaka-tulāvidyā*) hides the existence of the entity (ii) the appearance-cover (*abhānāpādaka-tulāvidyā*) hides the appearance of that entity. In case of Perception, when the Internal Organ (*antaḥkaraṇa*) goes out through an external sense-organ and assumes the form of the entity, both the covers are destroyed and that entity becomes the object of a valid cognition. That is why one cognizes 'The entity exists here and is appearing to me'. The relation between the premise-cognition and the derived cognition is an object (*viśaya*), that is, as real as a pitcher or a cow since it seems to be true. In case of Postulation, only the existence-cover of this relation is destroyed by the Internal

Organ, not the appearance-cover. That is why one cognizes ‘There is a relation (*upapādyā-upapādaka-bhāva*) between the premise-cognition and the derived cognition’; but nobody perceives that.

In Western Philosophy, there are several dichotomies that seek to answer a specific question: Why are the logico-mathematical truths different from the experience-based truths? Those dichotomies are Truths of Reason and Truths of Fact; Relations of Ideas and Matters of Fact; Synthetic a priori and the rest etc. I think Postulation cuts across all these dichotomies single-handedly and tries to answer the same question.

Notes and References :

1. *Gaṅgeśa's Theory of Truth*, Jitendranath Mohanty, Motilal Banarasidas Publishers.
2. This definition is modelled after the definition of *arthāpatti* offered by Vedāntaparibhāṣā: *upapadyajjñānena upapādakakalpanam*.
3. This can be formulated in Sanskrit as: *jīvē atra na cet anyatra bhavet, anyathā tasya jīvitvānupapattiḥ*.
4. *tadvyāpyaḥ tadvyāpakavyāpyḥ, anyathā tadvyāpyatvānupapattiḥ*// This is the logic underlying the following argument of Gadādhara Bhaṭṭācārya: *atha vahnivyāpyasādhya-kasthale....vahnimān vā pakṣa iti etādṛśasaūśayasya pakṣatātvaprasaṅgaḥ, sādhyavattūnīścayanivartyatvāt*//—*Dīdhitiprakāśikā, section on Pakṣatā*.
5. *anyathānupapattireva adṛṣṭivaimatyaiḥ dṛṣṭāntādarśanena vivādaḥ pinaṣṭi(sā) pramāṇāntaravirodhopamardanena svārthasādhikā*// —Nārāyaṇatīrthakṛtā *Siddhāntabindulaghuvyākhyākhā*.
6. *anayathānupapattiścedasti vastuprasādhikā/ pinaṣṭyadrṣṭivaimatyaiḥ sā hi sarvabalādhikā*//
7. In Sanskrit, this can be formulated as: *na tu kevalaḥ tatkalpanam, parantu upapādakarūpeṇa tatkalpanam*.
8. In Sanskrit, we can say: *upapādakanīśedhena upapādyanīśedhaprasaṅgastu upapādyopapādakabhāvasya prayojakaḥ*.
9. In this context, S is an *upādhi* that makes sure that P does not imply Q. A formal definition of *upādhi* is: *sādhya tvābhimatavyāpakatve sati sādhanatvābhimatāvyāpakāḥ upādhiḥ*//*Anumānacintāmaṇi*, of Gaṅgeśopād- hyāya.

Naming, Necessity and Essence

Indrani Sanyal

One of the most favourite subjects that occupied the attention of the philosophers of language during the last century is the nature of the relation between signs and signified, or the designators and the designata. In Indian philosophy also, the search for the nature of the *pada-padārtha-sambandha* i.e., the relation between the word and the thing denoted by the word, has often been a matter of primary concern. Designating, or in other words, naming is one of the most important functions of language, and generally the act of naming is performed by using proper names and general names. Philosophers of language like Frege, Russell, Kripke and others laboured hard to account for the nature of this very common day-to-day functioning of language. Any natural language, be it English, German, Sanskrit, Bengali or whatever else, has some in-built devices that enable the user of that language to name things. I would like to concentrate wholly in developing and elaborating Kripke's position on naming and necessity, without entering into any comparative or critical appraisal of his views with other pro-kripkean or anti-kripkean viewpoints. My approach in this paper will be exegetical and analytic.

Kripke is one of the philosophers of the recent time who has devoted much attention to words clarifying and understanding the notion of necessity, contingency and allied notions. Kripke's starting point is empirical. From the very fact that naming is possible, Kripke delineates the factors that account for this possibility. Kripke is not a sceptic, who is doubting the capability of linguistic entities to perform the task of naming. Naming for Kripke has some definite sense, and in this regard also, he does not vacillate to state quite unambiguously what actually naming amounts to. Naming, for Kripke, as we shall subsequently see, is closely inter-twined with the notion of rigid designation; and the notion of rigid designation presupposes the prior notion of trans-world identification. According to Kripke, a designator is said to

be a rigid designator if it designates the same object in all possible worlds, provided the object exists in that world. When a designator falls short of this requirement, it is said to be a non-rigid designator. By contrast, with rigid designator, it may be said that a non-rigid designator may designate different objects in different worlds. The descriptive phrase, 'the tallest boy in the class' may designate different persons in different worlds. A proper understanding of the Kripkean theory of rigid designation hinges on the notion of necessity, that very concept which has been found to be one of the most debated concepts of the western philosophy, especially in the realms of metaphysics, epistemology, logic and philosophy of language. From the Kripkean perspective, naming is nothing more and nothing less than rigidly designating; and the present article is an attempt to elaborate the Kripkean theory of rigid designation.

This paper consists of two parts. The first part will analyse and elaborate the doctrine of rigid designation, and will bring out clearly Kripke's arguments in defense of this claim; while the second part of the paper will concentrate on some of the basic presuppositions of this doctrine, and will also discuss some of the consequences of admitting this doctrine.

From Kripke is derived a uniform theory of naming, both with regard to proper names and general names, and subsequently it will be seen that his theory of naming goes beyond those of Mill, Russell and Frege. Kripke has agreement with Mill so far as proper names are concerned, for Mill's view about proper names as devoid of connotation is similar to Kripke's claim that proper names are devoid of senses. On the other hand, the Kripkean view about proper names is in sharp contrast with that of Frege, Russell, Strawson or Searle. According to Kripke, terms for natural kinds (like, 'cow' and 'tiger'), certain mass terms for natural kinds (such as 'gold' and 'water'), and certain terms for natural phenomena (such as 'heat' and 'light') are all closer to proper names. Kripke here differs from Mill, for according to Mill, general names have connotation, whether they happen to be concrete general terms or abstract general terms.

According to Mill, proper names are without connotation; for from the use of any proper name, nothing can be inferred about the nature of the object which is being referred to by that name. For example, the Bengali proper name 'Shyamali' may be the name of a woman, of a cow or of a house. 'Sundaraban' is the name of the most important forest of West Bengal. In fact this forest is densely covered with a particular variety of trees known as Sundari. But if due to any devastating natural calamity, the whole of the forest is destroyed, still the place will be named as Sundaraban. If one says that there are no Sundari trees in the forest of Sundarban, then that does not entail any self-contradiction. According to Mill however general names have connotation. We cannot say that the general name 'man' has no connotation; for we can infer say, animality and rationality with regard to general name, 'man'.

For Frege, proper names have both sense and reference. While explaining 'sense', Frege himself vacillated between two meanings of 'sense'. At places, Frege considers the sense of a designator to be its meaning; and at other places, sense of a designator is for him the way the reference of a designator is determined. Kripke is very much opposed to this Fregean venture for identifying the sense of a proper name with its meaning. He is also not quite favourable to the second sense of 'sense' as advocated by Frege. Kripke is a critique of the descriptive theory of names, and he maintains quite categorically that as names are rigid designators, they are not to be considered as synonymous with descriptions. According to Frege, descriptive phrases like 'the most intelligent king of the Mughal dynasty', 'the author of Gitanjali' are all names. However, though Kripke discusses the views of Frege as hyphenated with Russell, there are lots of differences between Frege and Russell. Russell's views about 'ordinarily called proper names' are, however, closer to Fregean view; which are, according to Russell, 'truncated descriptions'.

From Kripke's writings, the following two arguments may be

brought out clearly in support of the thesis that names are rigid designators:

First Argument: Since counterfactual conceiving is possible, names are rigid designators.

Second Argument: Since necessity is *de re*, names are rigid designators.

Things or events as they occur factually are objects of our thinking, believing or imagination as well as of our counter-factual conceiving. To counter-factually conceive of an event or object is to envisage it in the reverse direction from what it is in reality. Given an object *x*, which is actually *A*, one may be conceiving contrariwise, e.g. '*x* is *B*'. This counterfactual conceiving is not an extraordinary phenomenon, rather it is quite common among us. An old person thinks that if he were younger, he could have done something great. A young man thinks that if he were older, he would have done something wonderful. A doctor thinks that if he were an engineer, he would have constructed something enormous; while an engineer thinks that if he were a doctor, he would have done tremendous service to the nation. In all these cases, the main frame of thought is as 'if *x* which is actually *A*, were *B*'. Given an object *x* factually, how far our counter-factual envisaging or conceiving of the object is possible in defiance of its actuality? This much has to be admitted that even if we say that anything is conceivable about any object, it must have some check, beyond which no contrariwise thinking, to be meaningful at all, can go. About a table, I can think of how it would be if it were blue, instead of being brown in colour. About a person, I can think of, how it would be if he were six foot tall, instead of being five foot in height. The very possibility of the act of counterfactual conceiving presupposes, in the first place, a fixed locus, a stable mooring, an invariable point of reference; and secondly, a set of properties, actual or possible, which may mix and match, again actually or possibly, with that point of reference. In our language, we need to have some mechanism for picking up the invariant point of reference, and that is provided by the

technique of naming that we have in our language. Names are devices that enable us to get rooted to a particular object, and that accounts for the names being rigid designators.

Very closely related with this argument is Kripke's second argument, which says that names are rigid designators because *de re* necessity is justifiable. In the logical discourse, the discussion about the nature of necessity centres two sorts of necessity, one is said to be *de dicto* necessity and the other is said to be *de re* necessity. Here, in the context of rigid designation, we need to have some idea about what is *de re* necessity. Kripke provides us with a very straightforward account about *de re* modality in terms of having essential properties. Unlike a *de dicto* modal instance, where modal operator like 'necessity' or 'possibility' is a qualifier of a statement, in the *de re* instance, the modal operator is a modifier of the predicate as specifying the mode in which an object is in possession of a property. In the recent past, in the domain of the history of the development of modal logic, a great divide was witnessed among the protagonists of the thesis that objects have essence and its antagonists. Quine's stricture against essentialism, and along with all its corollaries, stating that there is no necessity in nature, that necessity is the product of our way of specifying an object, that there is no necessity independent of the manner of specification, are wholly rejected by Kripke. Kripke very unambiguously endorsed that objects have essence, and the property that accounts for the origin of the object or the very constitution of the object is a necessary property of the object. The *de re* necessity that attaches to a particular object, that makes a particular a distinct particular as distinguishable from the other, is understood in terms of necessity of origin and necessity of constitution i.e., substantial make up. Kripke does not uphold the view that a particular is just a 'bundle of qualities', or that a particular is something behind these properties. Kripke subscribes to the view that a particular is a qualified particular, to quote from Kripke, ".....this table is wooden, brown, in the room, etc. It has all these properties and is not without properties, behind them; but

it should not therefore be identified with the set, or 'bundle' of its properties, nor with the subset of its essential properties."¹ This leads to the query regarding identification of a particular of this world in another possible world. Kripke very clearly maintains that the talk of possible worlds often misguides towards which us into thinking that possible worlds are like distant countries we may be looking through telescopes, 'trying to locate the objects of actual world.' "So we do not begin with the worlds and then ask about criteria of transworld identification. On the contrary..., we begin with the objects which we *have*, and can identify, in the actual world."² In an earlier paragraph of this paper, while discussing about the limits of conceivability along with counter-conceivability, it was suggested that such activities, as meaningful pursuits, can operate only within certain constraints. The limit to counter-conceivability about an object, which is a qualified particular, is set by its *de re* property, i.e., essence. "Could the Queen Elizabeth-II—could this woman herself—have been born of different parents from the parents from whom she actually came? Could she, let's say, have been the daughter instead of Mr. and Mrs. Truman?"³ Kripke finds no problem in answering in affirmative to this question. For it is just a contingent fact that the woman who is born of royal blood is born of royal blood. The Queen Elizabeth actually could have been a child of Mr. and Mrs. Truman—"Perhaps in some possible world Mr. and Mrs. Truman even had a child who actually became the Queen of England and even passed off as the child of other parents."⁴ Should we regard this situation to be one in which this very woman, whom we call Elizabeth II, was the child of Mr. and Mrs. Truman? Kripke would answer negatively, for we are here talking about *this very woman*, who is *necessarily* born of parents she is born of. We may think of some other woman who is a child of Mr. and Mrs. Truman and is quite similar to Queen Elizabeth II. But this woman would not be Queen Elizabeth II, for "It seems to me that anything coming from a different origin would not be this object."⁵ The case is the same with regard to a table which is made of a block of wood.

'Now could this table have been made from a completely different block of wood, or even of water cleverly hardened into ice -?'⁶ Thus, for Kripke, in this instance, the substantive make-up of the object is essential.

For Kripke, naming is causally related to the first use of name by the user of the name. As Kripke is propounding a theory about rigid designation, it would be wrong to infer that Kripke is not ready to allow any description to be associated with names—whether proper or general. He imagines a hypothetical baptism ceremony accounting for the first use of a name—be it a proper name or a general name. The nature of the relation whereby a name is related with its referent has been discussed in many theories. So far Kripke is concerned, he does not subscribe to any view that is inclined to posit certain special states of the mind for effecting this relation between the name and its referent. Names get their references because their use is causally connected in an appropriate way with the objects that are referred to. This connection, Kripke shows, is achieved by an initial baptism, where the object may be named by ostension, or the reference of the name may be fixed by a description. The subsequent users of the name, who learn the use of the name from the previous users of the name, who must also preserve the link of the name with the object referred. Thus, only the names will be 'passed from link to link'. Suppose a baby is born in a family, and its parents decide to call the baby by a certain name, say, 'John'. In the naming ceremony, its parents ostensively, i.e. by pointing their finger towards the baby, tell: 'he is named 'John''. Parents talk about their child named John to other relatives and friends. Again, these relatives and friends talk about John to other people, and through various sorts of conversation, the name spreads like a chain from link to link. As in the case of proper names, so it is in the case of general names such as 'gold' it is fixed by an ostension or by description. We may imagine a hypothetical situation where the baptism of the substance gold takes place. According to Kripke, this sort of initial baptism of the substance,

'gold' may take place by some such description: 'Gold is the substance instantiated by items over there, or at any rate, by almost all of them'. Here, the naming consists in naming that kind of thing, where the kind is identified by paradigmatic instances. In this instance, 'gold' is being used as a term for certain kind of thing. To quote from Kripke, "I believe that in general, terms for natural kinds (e.g., animal, vegetable, and chemical kinds) get their reference fixed in this way: the substance is defined as the kind instantiated by (almost all of) a given sample."⁷

One of the important distinctions that has been highlighted by Kripke is the distinction between a description giving the meaning of the name and a description fixing the reference of the name. Kripke maintains this distinction both with regard to proper names and general terms. Kripke, as we have already pointed out, believes that names are non-connotative or do not have any sense. But from that it should not be supposed that Kripke does not admit any association between names and descriptions. As interpreted by Kripke, the views of Frege, Russell, Searle and others with regard to proper names (or the views of Mill, Frege and others with regard to general names) imply that descriptions associated with these names constitute their meaning. Kripke thinks that the description theory of names or cluster-of-descriptions theory of names provides us a wrong picture of what happens in naming. The picture of naming that is derived from this view is this: "I want to name an object. I think of some way of describing it uniquely and then I go through, so to speak, a sort of mental ceremony: By 'Cicero' I shall mean the man who denounced Cataline; and that's what the reference of 'Cicero' will be."⁸ Kripke says quite categorically that this picture is not a correct picture. He sums up the above description theory of names or its different versions in the form of six theses and a condition on the satisfaction of other theses. According to the description theory of names,

1. To every name or designating expression 'X', there corresponds a cluster of properties that is believed by A to constitute the meaning of the name or designating expression.

2. Out of those cluster of properties, one of the properties or some conjointly, are believed by A to pick out some individual uniquely. .

From the above two theses it appears that the distinction between description as giving the meaning of a name and a description fixing the reference of a name, which is so much highlighted by Kripke, has been totally neglected. Kripke points out that it is very likely that more than one descriptions may remain associated with a name. Under that circumstance, which particular description is supposed to give the meaning of the name? What particular description gives the meaning of the name 'Aristotle'? Some may say that the description of being the disciple of Plato gives the meaning of the term Aristotle'. Some may suggest that the description being the teacher of Alexander is the description that provides meaning of the name 'Aristotle'. Again, some may take the description 'being born at Stagira' to be the defining property of Aristotle. Under these circumstances, what would be the nature of the statement viz., 'Aristotle was born at Stagira'? If one considers the description, viz., 'the disciple of Plato' or 'the teacher of Aristotle' then the statement, viz., 'Aristotle was born at Stagira' may mean for him either 'The disciple of Plato was born at Stagira' or 'The teacher of Alexander was born at Stagira'. Thus understood, these statements are contingent statements. But if according to someone, the meaning of the name 'Aristotle' be the person born at Stagira, then the statement mentioned above, viz., 'Aristotle was born at Stagira' would mean 'The person born at Stagira is the person born at Stagira', which is a vacuous tautology. Hence, if it is insisted that the meaning of a name is the description associated with it, then that will lead to error. Frege, though a staunch supporter of the view that description determines the meaning of a name, was aware of this problem.

Another point to note is that the notion of *de re* necessity, which says that x is necessarily so and so, presupposes trans-world identity of x with itself. To say that x is necessarily so-and-so, is to say that x is so-and-so in all possible worlds. It has been asked

by the critics as to how we identify x of this w_1 with the x of w_2 or w_3 or w_4 , and so forth. Kripke, however, thinks that in this case, the question is a pseudo-question. The very presupposition of *de re* modality is the trans-world identity of the object with itself. Kripke confesses that he himself was responsible for creating an illusion about possible worlds as distant countries to be discovered by powerful telescopes. He employed the imagery of possible worlds just as a heuristic device, as an aid to imagination to explain the semantics of modal logic.

Another important observation of Kripke is that naming is rigidly designating in the case of some specific general names as well. Kripke remarks, '.....certain general terms, those for natural kinds, have a greater kinship with proper names than is generally realized.'⁹ (p. 330) He also includes within this category certain species names, whether they are count nouns such as 'cat', 'tiger', 'chunk of gold' or mass terms such as 'gold', 'water', 'iron pyrites', or terms for natural phenomena, such as 'heat', 'light' and 'sound'. With regard to these general terms, Kripke would say that these names are attached to the objects through a kind of hypothetical baptism. As in the case of proper names, the reference of a term is fixed by description or ostension, and subsequently the reference is determined by a chain, passing the name from one link to the other of the chain; so is the case with general terms—its reference is fixed by a description or a 'definition' by picking out some instances of a given sample, and subsequently, the reference here also is determined by a chain. Kripke maintains that the definition does, however, express an *a priori* truth. The description that fixes the reference fixes it in an *a priori* way as the '1 in. = length of S'. Thus the natural phenomena heat may be picked up by the description viz, that which is sensed by S. Thus, in this case also, an identity fixes the reference; and that is fixed in an *a priori* way; but it is not necessary; since heat might have existed without any beings like us who had that type of sensation S. These are instances where something is *a priori* but not necessary. The property by which we identify heat is a contingent property of heat. This is

one of the 'things that Kripke establishes in his drive to delink necessity from *a priori*. Kripke argues that it will be erroneous to hold that 'whatever gives people these sensations' is the meaning of 'heat'. People might not have been sensitive to heat, and yet there could be heat. Light rays may also, due to some other factors, give this type of sensation that is associated with heat. In that case, it will be light, and not heat, as previously said, which is the cause of that kind of sensation. In this case, we are not using 'heat' as synonymous with 'whatever gives us sensation of that type'.

Kripke takes a different stand with regard to identity statements expressing scientific discoveries, viz., 'Heat is the motion of molecules', 'Light is a stream of photons' and similar such statements expressing identity. These theoretical identifications are necessary as involving two rigid designators, but they are *a posteriori*. Kripke brings out clearly that naming involves rigid designation, and his tenet of rigid designation involves the notion of necessity. Philosophers discuss about different concepts like necessity, contingency, *a priori*, *a posteriori*, analyticity syntheticity etc. Generally, it was supposed that concepts of necessity, *a priori* and analyticity one the one hand and the concepts of contingency, *a posteriori* and syntheticity on the other hand go together. It was Kant who made us aware that there is a difference between the concept of analyticity and *a priori*, and his endeavour to establish how synthetic *a priori* judgements are possible is well known. Kripke, however, goes beyond Kant in breaking the earlier ways of looking at these concepts by making provision for necessity which may be either *a priori* or *a posteriori*. Kripke thus destroys the myth that the concept of necessity and *a priori* must be interchangeable. In this connection, it is to be seen what are the implications of these concepts. Since Kant, it was held that whatever can be known independently of experience is *a priori*. Naturally, the question arises: if it is said that *a priori* truths are known independently of experience, then by whom are such truths known? Are these truths known by God, by Martians or by human beings like us? Going a step further, it has been

maintained that *a priori* truths are known without experience. Hence, it has been claimed that if anything belongs to the realm of *a priori* knowledge, then it cannot be known by experience. Kripke refuses to accept this type of division between the realm of *a priori* knowledge and the realm of empirical knowledge. If something is known by some *a priori* means, then that does not imply that it cannot be known empirically. Kripke shows that it would be erroneous to argue that if something *can* be known *a priori*, then it *must* be known *a priori*.

The other important and closely related concept is that of necessity. There are different ways of interpreting this concept of necessity. Kripke does not subscribe to the epistemological interpretation of the notion of necessity. Understood in this epistemological sense, the concept of necessity becomes synonymous with a *a priority*. Kripke says, "At any rate I shall not use the terms 'a priori' and 'necessary' interchangeably here."¹⁰ This is possible for Kripke, for he understands necessity in a metaphysical sense. Kripke brought in the notion of possible worlds to account for the notion of necessity in this metaphysical sense. The notion of possible world in its turn has led to different philosophical problems, of course, which I need not discuss here. Taking his stand from this different perspective, it was possible for Kripke to talk about necessity which may be *a priori* and also about necessity which may be *a posteriori*.

To conclude, Kripke's thesis regarding rigid designation thus establishes a very close connection between naming and necessity. However, "Any necessary truth, whether *a priori* or *a posteriori*, could not have turned out otherwise."¹¹

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Notes

1. 'Naming and Necessity', p. 272.
2. Ibid., p. 273.
3. Ibid., p. 313.
4. Ibid., p. 313.
5. Ibid., p. 313
6. Ibid., p. 314.
7. Ibid., p. 328.
8. Ibid., p. 291
9. Ibid., p. 330
10. Ibid., p. 260
11. Ibid., p. 263.

Reflections on Logical 'System' in Leibniz and Rationalism—transition to historicity and authenticity

Kalyan Bagchi*

I

In this paper I want to pinpoint the shortcoming or deficiency of Leibniz's logical theory in so far as he distinguishes between 'necessary' and 'contingent' truths and includes 'contingent' truths (alongside 'necessary' truths) in his logical system taken to be *the* rational system *par excellence*. To me, either the 'system' has to be reviewed as opentextured or the very idea of 'system' has to be abandoned altogether.

For Leibniz, those propositions are 'necessary' which follow from the Law of Non-Contradiction. That is to say, when one's attempt at contradicting a proposition lands one in self-contradiction, one is just mired in one's self-contradiction and nothing matters *to the proposition as a logical entity*: the proposition *remains there* as 'necessary'.

On the contrary, when the opposite of a proposition is possible, i.e., *conceivable*, the proposition in question is not necessary, but contingent.

' $2+2=4$ ' is a necessary proposition; for, its contradictory is not *conceivable*. To say 'Its contradictory is not conceivable' is to say 'Its contradictory is self-contradictory' which again is to say 'It is derived from the Law of Non-Contradiction'.

On the contrary, 'Shakespeare wrote *Hamlet*' is contingent; for its opposite is possible, i.e., *conceivable*. In a possible world, Shakespeare might not have written *Hamlet*. That is to say, 'wrote *Hamlet*' (the predicate) is not necessary, i.e., *not in all worlds* true of 'Shakespeare' (the subject).

So a necessary proposition is that which holds true in *all* worlds,

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real and *possible*. And its *criterion* is the Principle of Non-Contradiction. It *cannot be* contradicted. But the question is : How to determine that it *cannot be* contradicted? One's attempt to contradict the proposition leads one to self-contradiction. ' $2+2=4$ ' is necessary

(i) because it cannot be contradicted, and

(ii) because the attempted contradiction is self-contradictory;

The proposition stands there, so to say, as a logical entity (and also as a metaphysical entity in Leibniz's *rational world*) thwarting any *individual attempt* at trying to *think* its contradictory: Such thinking is barred by the *world* of which the architect is God, Reason *par excellence*. The proposition is a citizen of the rational world, which is *independent* of one's individual understanding of it. If one understands it, he gains visa for the (rational) *world*; if not, he is just barred entry thereinto.

An interlude

It is *not* Leibniz's point that the *contrary* of necessary propositions is *unimaginable*, whereas the contrary of contingent propositions is *imaginable*. Leibniz is a fullfledged rationalist. He is not an Empiricist as Hume was; to Hume 'truths of fact' are those whose contrary is imaginable. Not 'contrariety' but 'contradiction' would be the watchword for Leibniz. Again, rationalist logician as he was, what counted for Leibniz was conceivability and *not* imaginability, inconceivability and *not* unimaginability. 'Necessity' and 'contingency' are dictions for Leibniz; 'unimaginability' and 'imaginability' are dictions for Hume.

For Leibniz, then, the contradictory of a necessary proposition is just not allowable in the logical *world*, while the opposite of a contingent proposition is *conceivable* (not imaginable, *contra* Hume and the Empiricists), i.e., can be accommodated in a possible world.

One ought to be clear about what the 'opposite' of a proposition means. The 'opposite' is *not* 'contradictory'. 'Contradictory' would not be admitted in Leibniz's logical world. The opposite of a

necessary proposition is not 'conceivable' at all, and so, not admissible in Leibniz's logical world. 'Conceivability' is the minimum requirement for a proposition to be admitted into the Leibnizian logical world. What is 'conceivable' is 'possible', though not 'necessary'. But along with what is 'necessary', what is 'possible' is admissible into Leibniz's logical rational world, 'possibility' being 'conceivability' which is a rational notion; and what is 'necessary' is, for Leibniz, 'real' (besides being 'possible' or 'conceivable'). Quite consistently, as a logician would, Leibniz regards 'possibility' as a 'logical' notion. Yet the metaphysician in him regards 'possibility' as a *deficient notion*, it being not 'reality'; as it is not 'compossible' with all possibilities or all possible worlds in the mind of God. Leibniz's *logical* world is not God's world, though God's world includes Leibniz's. God's world is the best combination of all possible worlds: the combination being given, it *necessarily becomes* 'real'. The Leibnizian notion of 'necessity' is *not* the analytic notion of necessity which has nothing to do with what is 'real'. For Leibniz, necessity is grounded in 'reality'. Here, too, the metaphysician in Leibniz outstrips the logician in the analyst. The Ontological Argument is woven into the very structure of Leibniz's philosophy, rationalist as he is.

II

But for Leibniz, this distinction between necessary propositions and contingent propositions is *overarched* by a principle more pervasive or broader than the Principle of Non-Contradiction: it is, what he calls, the Principle of Sufficient Reason. According to this principle, there is a 'sufficient reason' why a truth, necessary or contingent, is so. In God's view, every truth is necessary; and, there is a sufficient reason—which is the Divine Reason—why a truth *appears* to be contingent to the aspirant after the Divine. Earlier, we observed that the Ontological Argument is woven into the structure of the thought of Leibniz, the Rationalist. But now Leibniz takes us deeper: God's mind has 'sufficient reason' to credit 'necessary truths' with 'reality'. It is the Principle of

Sufficient Reason which yokes together all truths or propositions, necessary, contingent and possible.

But why, it may be asked, does Leibniz need God to preside over the system of all truths? Why does he need God to invest contingent truths, *ultimately*, with necessity, i.e., rationality? Leibniz's distinction between necessary and contingent truths is not the same as Hume's distinction between 'demonstrative reasoning' (in Mathematics and Logic) yielding 'truths of reason' and 'empirical reasoning' (in the natural sciences) yielding 'truths of fact'. Hume does not need to yoke them together as Leibniz needs to, committed as the latter is to *an overarching rationalism of all truths*. For Leibniz, even contingent truths have a rationality credited to them by God: one can legitimately, i.e., within the rationalist atmosphere that Leibniz breathes, ask the question 'why are some truths contingent?' and one can, within the Leibnizian system again, find out the answer to the question which (i.e., the answer) would be that all monads are not the same from the point of view of the degree of clarity (rational clarity) of their representation of the world, and that it is on account of such difference that truths appear to be more organized, more well-knit, *more systemic* to some monads, while they appear to be comparatively less well-knit or less systemic to other monads. And Leibniz would go farther here in banishing from his scheme of things even one who, supposedly in a *non-Leibnizian* mood, may seek to make a *thought experiment of trying to conceive* the opposite of necessary truths derived, according to Leibniz, from the Law of Non-Contradiction. Such thought experiment would be ruled out of court by Leibniz; for, inconceivability of necessary truths is *not reached after* making such an experiment. 'Inconceivability' is not psychological unimaginability, but is just the recognition or admission, on a monad's part, of the dawn of the truth of the principle behind it, viz., the Law of Non-Contradiction. One who, like an Empiricist, sits down to *imagine* the opposite of the Law of Non-Contradiction, would better be consigned by Leibniz to a Humean world.

But then the question revists us: 'what need is there of God to yoke necessary and contingent truths under rationality?' It seems that the question resurfaces because, lurking behind his idea of God as presiding over the system of rational truths, there was a question which Leibniz did not face squarely, viz., 'what is the logic of a logical system?' He failed to see that the *question was meta-logical*, and it could be supported for him only on theological grounds. The logic of a logical system, he would say, is in the Principle of Sufficient Reason. But logic or reason does never, rather can never, ask the question of the logic of logic or the reason of reason; it is the philosopher who raises this question (which for the logician would be an 'external' question, *a la* Camap). Leibniz the philosopher, as different from Leibniz the logician, raised this question. It is, however, another matter that the philosopher sought support from Theology (*Theodicy*). But whatever it is—theodicy or philosophy, what Leibniz appeals to is *extra-logical*.

It was the same tragic denouement of the story earlier for Descartes. N.K. Smith has aptly put it thus in his *Studies in Cartesian Philosophy* (with reference to Descartes). 'Descartes will trust reason just so far as he sees it to be necessary to prove the existence of God and he will then throw on God the responsibility of an unlimited trust'. The logical system demonstrating the existence of God (if a logical system can at all 'demonstrate' 'existence'!) is ultimately chained to God for its authenticity. This is a vicious circle.

Or else, if the circle is not recognized, but sought to be made little of; then *either*, as in Leibniz, theology is made the ground of logic, which is absurd; or, logic comes to be understood as the expression of elaboration of Reason as *self-justifying*, instead of being again justified by *another* reason or logic. This is an idea which later caught hold of Hegel's philosophic imagination. *Then*, following Hegel, we can see that the Leibnizian deficiency, in respect of logic seeking a *terra firma*, is overcome in the expansive self-dialectic of Reason, which is what logic is taken to be in rationalism.

III

And yet here is not the end of the story of *logic striving after its own logic*. Full-blooded Rationalism as Hegel's is, it understands reason as constructing one single internally coherent system within which (it is claimed) truths find place. But what about the *system*? By the very logic of rationalism of whatever variety—Cartesian, Leibnizian or Hegelian—the system itself has to be authenticated. Who or what authenticates it? God of Leibniz? Absolute reason of Hegel? In that case, we would need a God of God, an Absolute Reason of Absolute Reason. A *regressus ad infinitum* stares us in the face.

But there is a big 'if' here. The regress would be unending if the idea of 'system' is *not* critically probed into. Two alternatives seem to be possible here.

Either, 'system' may be historised and relativised, and its authentication obtained in the very historising process involving contextualistic and relativistic considerations, *which* precisely would constitute its logic. This would be, indifferently, the Marxian or the Popperian or the Pragmatist alternative. A proviso here. No 'end of history', no end of the historising process is imagined here: if need be, then, orthodox Marxism visualizing the acmé of the historising process in the inevitable end of *the* 'Revolution' may here to be taken with some grain of salt.

Or, the idea of 'system' itself may be abandoned completely in the viewing of truth. Truth, on this alternative, is not within any system or structure, not, within any sacrosanct institution (*pratiṣṭhāna*)¹ but is what is self-authenticated, self-evident, self-valid (*svaprakāśa*). This would be roughly the Vedānta alternative. But here, history is *not frozen in time*. *Self-authentication itself is historised* when an individual has to settle accounts with himself in a given situation, determines his course of action, fulfils his duties (what, in Sanskrit, is called *dāya*) to others and to the world at large: at every stage of authentication, the individual fulfils his *commitment* to others (which is also his self-commitment: commitment is essentially self-commitment). But whatever it is,

whatever its contours, self-authentication without any structure, unbound to any system, free from all fetters remains the truth for the committed one to the end of the chapter.²

References:

1. In one aspect of it, Truth as Non-violence would be *institution—free* for Mahatma Gandhi.
2. In Herbert (1776-1841), we come across the very important remark ‘All concepts through which we think our faculty of knowledge are themselves metaphysical concepts’ (*Lehrbuch zur Einleitung*. Quoted in Falckenberg’s *History of Modern Philosophy*. First Edition Impression. Calcutta Progressive Publishers, 1953, p. 507). We readily see that the idea which germinated in Leibniz (1646-1716), viz., the rational system of logic has again to be authenticated by Divine Reason, continued in the philosophical tradition of German Idealism and Culminated in Hegel (1770-1831).

As to the idea of the self-elaboration of logic in Hegel, reference may be made to the distinction made in *Vedāntaparibhāṣa* between *parārthānumāna* and *svārthānumāna*. *Parārthānumāna* is logic as demonstration, *svārthānumāna* is logic as self-authentication. Vedānta finally would understand logic as self-authentication: for it truth is self-valid (*svataḥpramāṇa*). And, it may be claimed that Vedānta goes beyond the Hegelian or Rationalist idea of *reason*’s self-authentication: it would point out that reason must need be demonstrated and this would lead to infinite regress, *unless* it is *assumed*, as by Rationalists of all varieties, that Reason’s development reaches its acmé in the real, or that in God, reason meets the ‘real’ (Ontological Argument). Contrarily, for Vedānta, self-authentication is but *inwardly realizing the real*.

Jaakko Hintikka's Constructive Embeddability Technique of Model Logic

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Jaakko Hintikka in [1] has semantically outlined three systems M , M^* , M^{**} of quantified modal logic with contingent identity. In order of strength M is the weakest, M^* is stronger than M but weaker than M^{**} . Among these systems M is highly interesting as it is free from two philosophically objectionable formulas namely (i) $(\exists x)\Box K(x) \supset \Box(\exists x) K(x)$ (or $\Diamond(\Box x) K(x) \supset (\Box x) \Diamond K(x)$) and (ii) $(\Box x)\Box K(x) \supset \Box(\Box x)K(x)$ (or $\Diamond(\exists x)K(x) \supset (\exists x)\Diamond K(x)$). Note that the formulas specified under (ii) is the Barcan formula. The philosophical objections in interpreting the Barcan formula are well-known. Further the formulas considered under (i) are theorems T_4 and T_3 respectively of $LPC + T$ of Hughes and Cresswell [3, p. 144]. For the first time Hintikka [1, p. 61-62] called the attention to the philosophically objectionable feature in interpreting the formula " $(\exists x)\Box K(x) \supset \Box(\exists x)K(x)$ ". If ' $K(x)$ ' is interpreted as ' x is round', the formula intuitively says that since there happens to be wheels (that are necessarily round), the existence of round objects are unavoidable or necessary feature of the world which is absurd. In this paper our goal is to study the system M of quantified modal logic (without identity) by using Hintikka's constructive embeddability technique. For this §1 an artificial language \mathcal{L}_m^* suitable for the development of quantified modal logic (without identity) is defined. Then in §2, the crucial notion of first order Hintikka embeddability for sets of formulas of \mathcal{L}_m^* is introduced by defining the notions of model set and model system. Further, in the same section the Kripke semantics for M is given. Then we describe a method of obtaining a first order Kripke model from a given first order model system. Conversely, one can obtain a first

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order model system in an analogous manner from a given first order Kripke model. The §2 concludes with necessary proof of the proposition that first order Hintikka embeddability and first order Kripke satisfiability are equivalent properties. Then our final section §3 is devoted to define tree system for M followed by the usual consistency and completeness proofs. The paper concludes with a remark that “tree-characterization of consistency”, “Hintikka’s notion of first-order embeddability” and “Kripke’s characterization of first-order satisfiability” are equivalent properties for the system M .

§1. Language for Quantified Modal Logic (without identity): \mathcal{L}_m^*

Let us define an artificial language \mathcal{L}_m^* (called language for quantified modal logic without identity) consisting of the following categories of symbols:

- (i) Individual constant symbols : a_1, a_2, a_3, \dots
- (ii) Individual variable symbols : x_1, x_2, x_3, \dots
- (iii) Propositional variable symbols : p_1, p_2, p_3, \dots
- (iv) Propositional connective symbols: ‘ \sim ’ (not), ‘ $\&$ ’ (and) ‘ \vee ’ (either...or...), ‘ \supset ’ (if... then...) and ‘ \equiv ’ (...if and only if....)
- (v) Predicate symbols : $p_1^1, p_2^1, p_3^1, \dots; p_1^2, p_2^2, p_3^2, \dots; \dots, p_1^n, p_2^n, p_3^n, \dots; \dots$
- (vi) Quantifier symbols : ‘ \forall ’ (all), ‘ \exists ’ (some)
- (vii) Grouping symbols : ‘(’ (left parenthesis) ‘)’ (right parenthesis), ‘,’ (coma)
- (viii) Modal symbols : ‘ \Box ’ (necessity), ‘ \Diamond ’ (possibility)

The notion of an expression, atomic formula, formula, sub-formula and proper sub-formula are defined in an usual way.

Convention:

- (i) We abbreviate 'a₁' as 'a'; 'a₂' as 'b'; 'a₃' as 'c' and so on.
- (ii) We use English upper case letters such as A, B, C with or without subscript as metavariables for atomic formulas; J, K, L, are used as meta-variables for formulas. The upper case Greek letters such as Σ , Δ , Γ , θ are used as meta-variables for set of formulas.

§2. Model Sets, Model Systems and Kripke Models:

For Hintikka satisfiability of a set Γ of formulas amounts to the embeddability of Γ into a particular type of set of formulas called model set. In other words, if a set Γ of wffs is satisfiable then there exists a model set Σ such that $\Gamma \subseteq \Sigma$. Further, if Γ is unsatisfiable then Γ cannot be embedded in any model set. In other words, given any satisfiable set of formulas it is always possible to construct a model set that contains the set in question. Note that a formula K is satisfiable iff the unit set $\{K\}$ is satisfiable.

Def. : A set Σ of wffs of \mathcal{L}_m^* is called a *first-order model set* iff it satisfies these following conditions: For any propositional variable or an atomic formula A,

- (C.c) if $A \in \Sigma$ then $\sim A \notin \Sigma$ i.e. both A and $\sim A$ should not be in Σ .

For any wff K and L,

- (C. $\sim\sim$) if $\sim\sim K \in \Sigma$ then $K \in \Sigma$,
(C. $\&$) if $(K \& L) \in \Sigma$ then $K \in \Sigma$ and $L \in \Sigma$,
(C. $\sim\vee$) if $\sim(K \vee L) \in \Sigma$ then $\sim K \in \Sigma$ and $\sim L \in \Sigma$,
(C. \vee) if $(K \vee L) \in \Sigma$ then either $K \in \Sigma$ or $L \in \Sigma$,
(C. $\sim\&$) if $\sim(K \& L) \in \Sigma$ then either $\sim K \in \Sigma$ or $\sim L \in \Sigma$,
(C. \supset) if $(K \supset L) \in \Sigma$ then either $\sim K \in \Sigma$ or $L \in \Sigma$,
(C. $\sim\supset$) if $\sim(K \supset L) \in \Sigma$ then $K \in \Sigma$ and $\sim L \in \Sigma$,
(C. \equiv) if $(K \equiv L) \in \Sigma$ then either ($K \in \Sigma$ and $L \in \Sigma$) or ($\sim K \in \Sigma$ and $\sim L \in \Sigma$).
(C. $\sim\equiv$) if $\sim(K \equiv L) \in \Sigma$ then either ($K \in \Sigma$ and $\sim L \in \Sigma$) or ($\sim K \in \Sigma$ and $L \in \Sigma$),

- (C. \forall) if $(\forall x) K \in \Sigma$ then for every individual constant 'a' occurring in Σ , $K \left(\frac{a}{x} \right) \in \Sigma$. Further, if Σ contains no individual constant 'a', $K \left(\frac{a}{x} \right) \in \Sigma$
- (C. $\sim \exists$) if $\sim (\exists x) K \in \Sigma$ then for every individual constant 'a' occurring in Σ , $\sim K \left(\frac{a}{x} \right) \in \Sigma$. Further, if Σ contains no individual constant 'a', $\sim K \left(\frac{a}{x} \right) \in \Sigma$,
- (C. \exists) if $(\exists x) K \in \Sigma$ then for some new individual constant 'a', $K \left(\frac{a}{x} \right) \in \Sigma$,
- (C. $\sim \forall$) if $\sim (\forall x) K \in \Sigma$ then for some new individual constant 'a', $\sim K \left(\frac{a}{x} \right) \in \Sigma$.

Note that (C.c) is called consistency condition and the rest of the conditions are called closure conditions.

Def. : By a *first-order model system* we mean an ordered pair $\Omega = (\mathcal{M}, \mathcal{R})$ where \mathcal{M} is a collection of first order model sets and \mathcal{R} is a binary reflexive relation defined on \mathcal{M} satisfying these following conditions. For any model set Σ , $\theta \in \mathcal{M}$

- (C. \diamond) (or C. $\sim \Box$) If $\diamond K \in \Sigma$ (or $\sim \Box K \in \Sigma$) then there exists $\Delta \in \mathcal{M}$ such that $\Delta \mathcal{R} \Sigma$ (read Δ is an alternative to Σ), $K \in \Delta$ (or $\sim K \in \Delta$),
- (Cg. \Box) (or Cg. $\sim \diamond$) If $\Box K \in \Sigma$ (or $\sim \diamond K \in \Sigma$) and $\theta \mathcal{R} \Sigma$ such that each individual constant of K occurs in some formulas of θ then $K \in \theta$ (or $\sim K \in \theta$).

Remark: If we omit the restrictions given above, it is possible to prove the following dubious formula i.e. $(\exists x) \Box K(x) \supset \Box (\exists x) K(x)$ as pointed out by Hintikka. For example, if $K(x)$ means "X is round", the wff intuitively says that since there happens to be wheel (that is necessarily round), the existence of round object is a necessary or unavoidable feature of the world. Moreover, by imposing the above restrictions, it is possible to avoid the highly objectionable assumption that if an individual exists in a world then it exists necessarily i.e. it exists in all the worlds alternative to that world.

Def : A set θ of wffs is called *first-order Hintikka embeddable* (*first-order embeddable*) iff there exists a first order modal system $\Omega = (\mathcal{M}, \mathcal{R}) \ni \theta \subseteq \Sigma$ for some $\Sigma \in \mathcal{M}$.

Def : A *first-ordered Kripke model* is an ordered 7-tuple $m = (\mathcal{W}, \mathcal{R}, \mathcal{D}, f, \{fw_i\} \text{ } w_i \in \mathcal{W}, g, V)$ where \mathcal{W} is a set of worlds, \mathcal{R} is a dyadic reflexive relation defined on \mathcal{W} , \mathcal{D} is non-empty set of individuals (the domain of individuals), f is a function from \mathcal{W} to $\mathcal{P}(\mathcal{D}) - \{\emptyset\}$ such that $f(w_i) = \mathcal{D}_i$ for each $w_i \in \mathcal{W}$ a non-empty subset \mathcal{D}_i of \mathcal{D} as its domain. For each $w_i \in \mathcal{W}$, fw_i is a function (possibly partial) from the set of all individual constants onto \mathcal{D}_i (i.e. each element of our w_i 's domain is denoted by some constant symbol). We require that for any individual constant 'c' and for any pair of worlds $w_i, w_j \in \mathcal{W}$, if fw_i and fw_j are defined on 'c' then $fw_i(c) = fw_j(c)$. For any n-adic predicate $P^n(a_{i1}, \dots, a_{in})$, $g(P^n(a_{i1}, \dots, a_{in}))$ is a set of (n+1) tuples of the form $\langle fw_i(a_{i1}), \dots, fw_i(a_{in}), w_i \rangle$ such that $fw_i(a_{i1}), \dots, fw_i(a_{in})$ are in \mathcal{D}_i and $w_i \in \mathcal{W}$. V is a binary function (possibly partial) from $\text{WFF} \times \mathcal{W}$ into $\{T, F\}$ satisfying these following conditions;

(V. P) For any propositional variable p and in any world $w \in \mathcal{W}$, $V(p, w) = T$ or $V(p, w) = F$ (V. A) For any atomic formula $P^n(a_{i1}, \dots, a_{in})$ and any world $w_i \in \mathcal{W}$,

$$V(P^n(a_{i1}, \dots, a_{in}), w_i) = \begin{cases} T, & \text{if } fw_i(a_{i1}), \dots, fw_i(a_{in}) \in \mathcal{D}_i \text{ and} \\ & \langle fw_i(a_{i1}), \dots, fw_i(a_{in}), w_i \rangle \in g(P^n), \\ F, & \text{if } fw_i(a_{i1}), \dots, fw_i(a_{in}) \in \mathcal{D}_i \text{ but} \\ & \langle fw_i(a_{i1}), \dots, fw_i(a_{in}), w_i \rangle \notin g(P^n), \\ \text{Undefined,} & \text{if } fw_i \text{ is undefined on} \\ & \text{atleast one of the symbols } a_{i1}, \dots, a_{in}. \end{cases}$$

(V, ~) For any wff K and any $w_i \in \mathcal{W}$

$$V(\sim K, w_i) = \begin{cases} T & \text{if } V(K, w_i) \text{ is defined and } V(K, w_i) = F, \\ F & \text{if } V(K, w_i) \text{ is defined and } V(K, w_i) = T, \\ \text{Undefined,} & \text{if } V(K, w_i) \text{ is undefined.} \end{cases}$$

(V.&) For any wff K, L and in any world $w_i \in \mathcal{W}$

$$V((K \& L), w_i) = \begin{cases} T, & \text{if } V(K, w_i) \text{ and } V(L, w_i) \text{ are both} \\ & \text{defined and } V(K, w_i) = V(L, w_i) = T, \\ F, & \text{if } V(K, w_i) \text{ and } V(L, w_i) \text{ are both} \\ & \text{defined and either } V(K, w_i) \text{ or } V(L, w_i) = F, \\ \text{Undefined,} & \text{if either } V(K, w_i) \text{ or} \\ & V(L, w_i) \text{ is undefined.} \end{cases}$$

(V.v)

$$V((K \vee L), w_i) = \begin{cases} T, & \text{if } V(K, w_i) \text{ and } V(L, w_i) \text{ are both} \\ & \text{defined and either } V(K, w_i) = T \text{ or} \\ & V(L, w_i) = T, \\ F, & \text{if } V(K, w_i) \text{ and } V(L, w_i) \text{ are both} \\ & \text{defined but } V(K, w_i) = V(L, w_i) = F, \\ \text{Undefined,} & \text{if } V(K, w_i) \text{ or } V(L, w_i) \text{ is} \\ & \text{undefined.} \end{cases}$$

(V. \supset)

$$V((K \supset L), w_i) = \begin{cases} T, & \text{if } V(K, w_i) \text{ and } V(L, w_i) \text{ are both} \\ & \text{defined and either } V(K, w_i) = F \text{ or} \\ & V(L, w_i) = T, \\ F, & \text{if } V(K, w_i) \text{ and } V(L, w_i) \text{ are both} \\ & \text{defined but } V(K, w_i) = T \text{ and } V(L, w_i) = F, \\ \text{Undefined,} & \text{if either } V(K, w_i) \text{ or} \\ & V(L, w_i) \text{ is undefined.} \end{cases}$$

(V. \equiv)

$$V((K \equiv L), w_i) = \begin{cases} T, & \text{if } V(K, w_i) \text{ and } V(L, w_i) \text{ are both} \\ & \text{defined and } V(K, w_i) = V(L, w_i), \\ F, & \text{if } V(K, w_i) \text{ and } V(L, w_i) \text{ are both} \\ & \text{defined and } V(K, w_i) \neq V(L, w_i), \\ \text{Undefined,} & \text{if either } V(K, w_i) \text{ or} \\ & V(L, w_i) \text{ is undefined.} \end{cases}$$

For any wff K and any world $w_i \in \mathcal{W}$

$$\begin{array}{l}
 (V. \forall) \\
 V((\forall x) K, w_i) = \left\{ \begin{array}{l}
 \text{T, if for every individual constant 'a',} \\
 fw_i(a) \text{ is defined and } V(K \left(\frac{a}{x} \right), w_i) = \text{T,} \\
 \text{F, if for some individual constant 'a',} \\
 \text{such that } fw_i(a) \text{ is defined and} \\
 V(K \left(\frac{a}{x} \right), w_i) = \text{F,} \\
 \text{Undefined, if for some individual} \\
 \text{constant 'a' } fw_i(a) \text{ is defined but} \\
 V(K \left(\frac{a}{x} \right), w_i) \text{ is undefined.}
 \end{array} \right.
 \end{array}$$

$$\begin{array}{l}
 (V. \forall) \\
 V((\forall x) K, w_i) = \left\{ \begin{array}{l}
 \text{T, if for every individual constant 'a',} \\
 fw_i(a) \text{ is defined and } V(K \left(\frac{a}{x} \right), w_i) = \text{T,} \\
 \text{F, if for some individual constant 'a'} \\
 fw_i(a) \text{ is defined and } V(K \left(\frac{a}{x} \right), w_i) = \text{F,} \\
 \text{Undefined, if for some individual} \\
 \text{constant 'a' } fw_i(a) \text{ is defined but} \\
 V(K \left(\frac{a}{x} \right), w_i) \text{ is undefined.}
 \end{array} \right.
 \end{array}$$

$$\begin{array}{l}
 (V. \exists) \\
 V((\exists x) K, w_i) = \left\{ \begin{array}{l}
 \text{T, if for some individual constant 'a',} \\
 fw_i(a) \text{ is defined and } V(K \left(\frac{a}{x} \right), w_i) = \text{T,} \\
 \text{F, if for some individual constant 'a'} \\
 fw_i(a) \text{ is defined and } V(K \left(\frac{a}{x} \right), w_i) = \text{F,} \\
 \text{Undefined, if for some individual} \\
 \text{constant 'a' } fw_i(a) \text{ is defined but} \\
 V(K \left(\frac{a}{x} \right), w_i) \text{ is undefined.}
 \end{array} \right.
 \end{array}$$

(V. \diamond) For any wff $\diamond K(a_{i1}, \dots, a_{in})$ such that a_{i1}, \dots, a_{in} are all individual constants ($n \geq 0$) occurring in K and for any $w_i \in \mathcal{W}$

$$V(\Diamond K(a_{i1}, \dots, a_{in}), w_i) = \begin{cases} T, & \text{if } fw_i \text{ is defined on } a_{i1}, \dots, a_{in} \text{ and} \\ & \text{there exists a } w_j \in \mathcal{W} \ni w_j \mathcal{R} w_i \text{ and} \\ & fw_i \text{ is defined on } a_{i1}, \dots, a_{in} \ni \\ & V(K(a_{i1}, \dots, a_{in}), w_j) = T, \\ F, & \text{if } fw_i \text{ is defined on } a_{i1}, \dots, a_{in} \text{ and} \\ & \text{for no world } w_j \in \mathcal{W} \ni w_j \mathcal{R} w_i \text{ and} \\ & fw_i \text{ is defined on } a_{i1}, \dots, a_{in} \ni \\ & V(K(a_{i1}, \dots, a_{in}), w_j) = F, \\ \text{Undefined,} & \text{if } fw_i \text{ is undefined on at} \\ & \text{least one } a_{ik}. \end{cases}$$

(V. \Box) For any wff $\Box K(a_{i1}, \dots, a_{in})$ such that a_{i1}, \dots, a_{in} are all individual constants ($n \geq 0$) occurring in K and for any $w_i \in \mathcal{W}$

$$V(\Box K(a_{i1}, \dots, a_{in}), w_i) = \begin{cases} T, & \text{if } fw_i \text{ is defined on } a_{i1}, \dots, a_{in} \text{ and} \\ & \text{there exists a } w_j \in \mathcal{W} \ni w_j \mathcal{R} w_i \text{ and} \\ & fw_i \text{ is defined on } a_{i1}, \dots, a_{in} \ni \\ & V(K(a_{i1}, \dots, a_{in}), w_j) = T \\ F, & \text{if } fw_i \text{ is defined on } a_{i1}, \dots, a_{in} \text{ and} \\ & \text{for no world } w_j \in \mathcal{W} \ni w_j \mathcal{R} w_i \text{ and} \\ & fw_i \text{ is defined on } a_{i1}, \dots, a_{in} \ni \\ & V(K(a_{i1}, \dots, a_{in}), w_j) = F, \\ \text{Undefined,} & \text{if } fw_i \text{ is undefined on at} \\ & \text{least one } a_{ik}. \end{cases}$$

Remark :

a) For any Kripke model, any wff J and $w_i \in \mathcal{W}$, $V(J, w_i)$ is defined iff f_w is defined on all the individual constant symbols occurring in J . Unlike the function V in the exposition of Hughes and Cresswell, "Introduction to Modal Logic", our V is strictly a truth valuation function and consequently we have introduced denotation function f_w and an extension function g for predicates.

b) The concept of model system for quantified modal logic (without identity) defined above is derived from Hintikka's model system treatment in [1] for the system M by ignoring identity. The Kripke semantics outlined above is derived from the semantics for

LPC+T as described in [3] by deleting the monotonicity condition i.e. not requiring that $w_i \mathcal{R} w_j$ implies $h(w_i) \subseteq h(w_j)$. The deletion of the monotonicity condition has the effect of blocking BF and HF.

Def: Given a first order model system $\Omega = (\mathcal{M}, \mathcal{R})$, we define a first order associated Kripke model $\mathcal{K}(\Omega) = (\mathcal{W}, \mathcal{R}^*, \mathcal{D}^*, \mathcal{A}, \{f_w\} \mid w_i \in w, g, V)$ in the following manner.

Let $e : \mathcal{M} \rightarrow \mathcal{W}$ be a bijection and let for all $w, w' \in \mathcal{W}$, $w' \mathcal{R}^* w$ iff $e^{-1}(w') \mathcal{R} e^{-1}(w)$. For any set Σ of wff, let $IC(\Sigma)$ = the class of all individual constant symbols occurring in the wffs in Σ . For each, $\Gamma \in \mathcal{M}$, we let $\mathcal{A}(e(\Gamma)) = IC(\Gamma)$.

$$\text{Let } \mathcal{D}^* = \bigcup_{\Gamma \in \mathcal{M}} \mathcal{A}(e(\Gamma))$$

For each $\Gamma \in \mathcal{M}$, $f_{e(\Gamma)}$ is defined exactly on $IC(\Gamma)$ and acts as an identity function i.e. for any $a \in IC(\Gamma)$, $f_{e(\Gamma)}(a) = a$. For any n -adic predicate symbol p^n , $g(p^n)$ is the set of $(n+1)$ -tuple of the form $\langle f_{e(\Gamma)}(a_{i1}), \dots, f_{e(\Gamma)}(a_{in}), e(\Gamma) \rangle$, where $f_{e(\Gamma)}(a_{i1}), \dots, f_{e(\Gamma)}(a_{in})$, are in $h(e(\Gamma))$ and $p^n(a_{i1}, \dots, a_{in}) \in \Gamma$. The valuation function V is determined by the following atomic assignment :

(V.P) For any propositional variable p and any world $e(\theta) \in \mathcal{W}$,

$$V(p, e(\theta)) = \begin{cases} \text{T, if } p \in \theta, \\ \text{F, if } \sim p \in \theta, \\ \text{undefined, otherwise.} \end{cases}$$

(V.A) For any atomic formula $p^n(a_{i1}, \dots, a_{in})$ and any world $e(\theta) \in \mathcal{W}$,

$$V(p^n(a_{i1}, \dots, a_{in}), e(\theta)) = \begin{cases} \text{T, if } p^n(a_{i1}, \dots, a_{in}) \in \theta, \\ \text{F, if } \sim p^n(a_{i1}, \dots, a_{in}) \in \theta, \\ \text{undefined, otherwise.} \end{cases}$$

Def: Given a first order Kripke model $m = (\mathcal{W}, \mathcal{R}^*, \mathcal{D}, \mathcal{A}, \{f_w\} \mid w_i \in w, g, V)$ we define a unique associated first-order model system $\mathcal{H}(m) = (\mathcal{M}, \mathcal{R})$ with a bijection $e : \mathcal{W} \rightarrow \mathcal{M}$ such that $e(w) = \{K \mid (K, w) = T\}$. Further for any $w, w' \in \mathcal{W}$, $w' \mathcal{R}^* w$ iff $e(w') \mathcal{R} e(w)$. It is easy to verify that the structure $\mathcal{H}(m) =$

$(\mathcal{M}, \mathcal{R})$ satisfies all the conditions required for a first order model system.

Def : A set Σ of wffs of \mathcal{L}_m^* is called *first-order Kripke satisfiable* iff there exists some first order Kripke model $m = (\mathcal{W}, \mathcal{R}^*, \mathcal{D}, \mathcal{A}, \{f_w\} \text{ wi } \in w, g, V)$ and for some world $w \in \mathcal{W}$, $V(J, w) = T$ for each $J \in \Sigma$. A wff K is called *first-order Kripke satisfiable* if the unit set $\{K\}$ is first-order Kripke satisfiable, otherwise it is called first order Kripke unsatisfiable. A wff K is called *first-order Kripke valid* (in symbol $\models K$) iff $\sim K$ is first order Kripke unsatisfiable; otherwise it is called first order Kripke invalid.

Lemma 1 (Hintikka's Lemma for quantified modal logic (without identity) Every first-order Hintikka embeddable set is first order Kripke satisfiable.

Proof :

Let Σ be a first-order Hintikka embeddable set of wffs of \mathcal{L}_m^* . Then by definition there exists a first-order model system $\Omega = (\mathcal{M}, \mathcal{R})$ such that $\Sigma \subseteq \theta$ for some $\theta \in \mathcal{M}$. Now consider the associated Kripke model i.e. $\mathcal{K}(\Omega) = (\mathcal{W}, \mathcal{R}^*, \mathcal{D}, \mathcal{A}, \{f_w\} \text{ wi } \in w, g, V)$. We wish to prove by induction on the degree of wffs K i.e. $dg(K)$ (Where degree of K means the number of occurrences of binary propositional connective symbols, modal symbols and quantifier symbols present in K) that for any $\theta \in \mathcal{M}$ and any wff $K \in \theta$,
if $K \in \theta$ then $V(K, e(\theta)) = T$ _____ (1)

Basis-Case : Let $K \in \theta$ with $dg(K) = 0$. Then K may be (i) a propositional variable (ii) an atomic formula or (iii) of the form $\sim^n A$ (for $n \geq 1$), (where A is any atomic formula or a propositional variable). The proof of the first two cases follows from the definition of $\mathcal{K}(\Omega)$. The case (iii) can be proved by the use of $(C.\sim\sim)$ and the valuation function V in $\mathcal{K}(\Omega)$. Assume the induction hypothesis. Then to prove our Lemma we have to consider these following cases:

Case 1 $K = (L \ \& \ J)$; *Case 2* $K = \sim (L \ \& \ J)$; *Case 3* $K = (L \vee J)$;

Case 4 $K = \sim(L \vee J)$; Case 5 $K = (L \supset J)$; Case 6 $K = \sim(L \supset J)$;
 Case 7 $K = (L \equiv J)$; Case 8 $K = \sim(L \equiv J)$; Case 9 $K = (\forall x)L$;
 Case 10 $K = \sim(\forall x)L$; Case 11 $K = (\exists x)L$; Case 12 $K = \sim(\exists x)L$;
 Case 13 $K = \Box L (a_1, \dots, a_n)$; Case 14 $K = \sim\Box L (a_1, \dots, a_n)$; Case
 15 $K = \Diamond L (a_1, \dots, a_n)$ and Case 16 $K = \sim\Diamond L (a_1, \dots, a_n)$.

The proof of truth functional cases i.e. case 1 - case 8 are easy. Thus we may consider the case 9, case 11, case 13 and case 15 because the proof of case 10 is like case 11; the proof of case 12 is like case 9 and the proof of case 16 is like case 13.

Case 9 $K = (\forall x) L \in \theta$ with $dg(K) = n + 1$

Assume the induction hypothesis. Let $(\forall x) L \in \theta$, $\mathcal{A}(e(\theta)) = IC(\theta)$. We have to show that $V((\forall x) L, e(\theta)) = T$. Since θ is a model set, by (C. \forall) for each individual constant symbol occurring in θ , $L \left(\frac{a}{x} \right) \in \theta$. But $IC(\theta) =$ the class of all individual constant symbols occurring in θ and obviously $f_{e(\theta)}(a) = a$ is defined for every a in θ . Now $dg(L \left(\frac{a}{x} \right)) = n$.

Hence by induction hypothesis, $V(L \left(\frac{a}{x} \right), e(\theta)) = T$ for each $a \in \mathcal{A}(e(\theta))$. Therefore, by (V. \forall), $V((\forall x) L, e(\theta)) = T$

Case 11 $K = (\exists x) L \in \theta$ with $dg(K) = n + 1$

Assume the induction hypothesis. Let $(\exists x) L \in \theta$, Now $\mathcal{A}(e(\theta)) = IC(\theta)$ is our domain of individuals. Since θ is a model set, by (C. \exists) for some individual a , $L \left(\frac{a}{x} \right) \in \theta$. Thus by induction hypothesis, $V(L \left(\frac{a}{x} \right), e(\theta)) = T$ for some $a \in IC(\theta)$. Therefore, by (V. \exists), $V((\exists x)L, e(\theta)) = T$.

Case 13 $K = \Box L (a_1, \dots, a_n) \in \theta$ with $dg(K) = n + 1$

Assume the induction hypothesis. Let $\Box L (a_1, \dots, a_n) \in \theta$. Let $\mathcal{A}(e(\theta)) = IC(\theta)$. Then $f_{e(\theta)}$ is defined on all a_1, \dots, a_n and $w_j \mathcal{R}^* e(\theta)$. Then there exists exactly one Γ in $\mathcal{M} \ni e(\Gamma) = w_j$. Now clearly $e(\Gamma) \mathcal{R}^* e(\theta)$ and let $f_{e(\theta)}$ be defined on all a_1, \dots, a_n , we have to show that $V(\Box L(a_1, \dots, a_n), e(\theta)) = T$.

Clearly $\Gamma R \theta$ and by the definition of $f_{e(\Gamma)}$, a_1, \dots, a_n are all in Γ . But $\Box L (a_1, \dots, a_n) \in \theta$. Hence by (Cg. \Box), $(a_1, \dots, a_n) \in \Gamma$.

Therefore by induction hypothesis, $V(L(a_1, \dots, a_n), e(\Gamma))=T$. Since $e(\Gamma)$ was arbitrary, by (V. \Box), $V(\Box L(a_1, \dots, a_n), e(\theta))=T$ i.e. $V(K, e(\theta))=T$.

Case 15 $K = \Diamond L(a_1, \dots, a_n) \in \theta$ with $dg(K) = n + 1$

Assume the induction hypothesis. Let $\Diamond L(a_1, \dots, a_n) \in \theta$. Then by (C. \Diamond), for some $\Gamma \in \mathcal{M}$, such that $\Gamma \mathcal{R} \theta$, $L(a_1, \dots, a_n) \in \Gamma$. Now $\mathcal{A}(e(\theta)) = IC(\theta)$ and $\mathcal{A}(e(\Gamma)) = IC(\Gamma)$ are respective domains of individuals. Clearly the definition of $f_{e(\theta)}$ and $f_{e(\Gamma)}$ are both defined on all a_1, \dots, a_n . Further, $e(\Gamma) \mathcal{R}^* e(\theta)$ holds. But $V(L(a_1, \dots, a_n), e(\Gamma)) = T$ by our inductive hypothesis. Therefore by (V. \Diamond), $V(\Diamond L(a_1, \dots, a_n), e(\theta)) = T$. This completes the proof.

Corollary 2

Every first order Hintikka embeddable formula is first order Kripke satisfiable.

Lemma 3

Every first order Kripke satisfiable set of wffs is first order Hintikka embeddable.

Proof :

Let Σ be a first order Kripke satisfiable set of wffs. Then by definition there exists a first order Kripke model $m = (\mathcal{W}, \mathcal{R}, \mathcal{D}, h, \{f_w\}_{w \in \mathcal{W}}, g, v) \ni$ for some world $w \in \mathcal{W}$, $V(K, w) = T$ for all K in Σ . Now by definition there exists a unique first-order model system $\mathcal{H}(m) = (\mathcal{M}, \mathcal{R})$ for m . But by the construction of $\mathcal{H}(m)$ it follows that $\Sigma \subseteq \theta$ where $\theta = e(v)$. Therefore, Σ is first-order Hintikka embeddable.

Corollary 4:

As a special case of Lemma 3, we obtain that if a wff is first order Kripke satisfiable then it is first-order Hintikka embeddable.

Remark 1 : From our lemma 1 and Lemma 3 it follows that first order Hintikka embeddability and first-order Kripke satisfiability are equivalent properties.

Now in the following section the proof-theoretic treatment of first-order modergic (without identity) will be developed by extending the tree technique of R.M. Smullyan in [4].

§3. Tree Rules for First-order modal logic without identity

For this purpose we may introduce the notion of a world tag (or model set tag).

Def : An n -tuple of positive integers a_1, a_2, \dots, a_n (for $n \geq 1$) with $a_1 = 1$ is called a *world tag or model set tag*.

Notation : A world tag or model set tag will be written in decimal numeral with the terms separated by dots. For example, 1.2.1, 1.1.3, 1.4.2.1 etc.

Remark : In search for counter example, a world tag (or model set tag) has the intuitive interpretation of naming a world (or model set) in Kripke model (or model system of Hintikka). For Example, 1.2.1 means the first alternative of the second alternative of the first world (or model set).

We now introduce these following E-rules for tree construction.
For wff K and L of \mathcal{L}_m^* ,

$$(E. \sim\sim) \frac{\sim\sim K}{K}; \quad (E. \&) \frac{(K \& L)}{\begin{array}{c} K \\ L \end{array}}; \quad (E. \sim\&) \frac{\sim(K \& L)}{\begin{array}{cc} \sim K & \sim L \end{array}}; \quad (E. \vee) \frac{K \vee L}{\begin{array}{cc} K & L \end{array}};$$

$$(E. \sim\vee) \frac{\sim(K \vee L)}{\begin{array}{c} \sim K \\ \sim L \end{array}}; \quad (E. \supset) \frac{(K \supset L)}{\begin{array}{cc} \sim K & L \end{array}}; \quad (E. \sim\supset) \frac{\sim(K \supset L)}{\begin{array}{c} K \\ \sim L \end{array}};$$

$$(E. \equiv) \frac{K \equiv L}{\begin{array}{cc} K & \sim K \\ L & \sim L \end{array}}; \quad (E. \sim\equiv) \frac{\sim(K \equiv L)}{\begin{array}{cc} K & \sim K \\ \sim L & L \end{array}}; \quad (E. \forall) \frac{(\forall x)K}{K\left(\frac{a}{x}\right)} \quad \text{where 'a' is any individual constant symbol}$$

$$(E. \sim\forall) \frac{\sim(\forall x)K}{\sim K\left(\frac{a}{x}\right)} \quad \text{where 'a' is any new individual constant symbol;}$$

(E. \exists)	$\frac{(\exists x)K}{K\left(\frac{a}{x}\right)}$	with the same proviso as in (E. $\sim\forall$);
(E. $\sim\exists$)	$\frac{\sim(\exists x)K}{\sim K\left(\frac{a}{x}\right)}$	with the same proviso as in (E. \forall).

Note : Let us call all these rules given above as first order tree extension rules (or first order E-rules).

(E. \diamond) (or (E. $\sim\Box$): For any node $\alpha = \pi \diamond L$ (or $\pi \sim \Box L$) in a branch \mathcal{B} where π is a world (or model set) tag and $\diamond L$ and $\sim \Box L$ is a wff of \mathcal{L}_m^* .

$\frac{\pi \diamond L \text{ (or } \pi \sim \Box L)}{\pi.j L \text{ (or } \pi \sim j \sim L)}$ Where j is the first positive integer \ni the tag $\pi.j$ is new at the particular stage of our tree construction.

(E. \Box)(a) (or (E. $\sim\diamond$)(a)) For node $\pi=(\pi L \text{ (or } \pi \sim \Box L)$ in a branch \mathcal{B} ,
 $\frac{\pi L \text{ (or } \pi \sim \Box L)}{\pi L \text{ (or } \pi \sim L)}$

(E. \Box)(b) (or (E. $\sim\diamond$)(b)) For node $\pi=(\pi L \text{ (or } \pi \sim \Box L)$ in a branch \mathcal{B} ,
 $\frac{\pi L \text{ (or } \pi \sim \Box L)}{\pi L \text{ (or } \pi i \sim L)}$ where $\pi.i$ is a model set tag previously occurred in $\mathcal{B} \ni$ each individual constant of L occurs at least in some wff of the tag $\pi.i$.

Note that the semantical motivation behind the above proviso is that its omission would enable us to prove the objectionable formula $(\exists x) \Box K(x) \supset \Box (\exists x) K(x)$.

Def : A tree is called *frist-order M-tree* iff it is constructed according to the first order E-rule and the E-rules namely (E. \diamond) (E. $\sim\Box$), (E. \Box)(a), (E. \Box)(b), (E. $\sim\diamond$)(a) and (E. $\sim\diamond$)(b).

Def : A *branch \mathcal{B} of a frist-order M-tree is closed* iff for some tag π and for some wff L both πL and $\pi \sim L$ occur in \mathcal{B} .

Note : The branch completeness for first-order M-tree will be defined analogously to the notion of branch completeness of first-order Logic as explained in [4] with suitable adjustments.

Def : A first order M-tree is called *closed* iff each branch of it is closed otherwise the tree is called *open*.

Def : A first order M-tree is called *complete* iff each branch of the tree is either closed or open as a complete open branch.

Remark 2

(a) Every first-order M-tree for any wff K can be terminated in a finite or denumerably many steps.

(b) Given any complete open branch \mathcal{B} of a first-order M-tree we construct a model system $\Omega = (\mathcal{M}, \mathcal{R})$ in the following manner. Let $\pi_1, \pi_2, \dots, \pi_n$ be all the n-distinct tags ($n \geq 1$) occurring in \mathcal{B} . Let us associate model sets $\Delta_1, \Delta_2, \dots, \Delta_n$ respectively with model set tags $\pi_1, \pi_2, \dots, \pi_n$ such that for any wff K, if K occurs in Δ_i iff the node π_i K occurring in \mathcal{B} for $i = 1, 2, \dots, n$. Let $\mathcal{M} = \{\Delta_1, \Delta_2, \dots, \Delta_n\}$ and for any $\Delta_i, \Delta_j \in \mathcal{M}$, $\Delta_i R \Delta_j$ iff $\Delta_i = \Delta_j$ or $\Delta_i = \Delta_{j.m}$ for some positive integer m. Further, we may note that \mathcal{M} may contain finite or infinite number of model sets and each model set may also has finite or infinite number of individuals.

Def : A branch \mathcal{B} of a first order M-tree is called *first-order M-embeddable* iff there exists a first-order model system $\Omega = (\mathcal{M}, \mathcal{R})$ and a function. $a : \text{Tag}(\mathcal{B}) \rightarrow \mathcal{M}$ with $\pi \mapsto \Sigma_\pi \ni$ for any model set tag π and any wff K, if πK occurs in \mathcal{B} then $K \in \Sigma_\pi$ and $\Sigma_{\pi^*} \mathcal{R} \Sigma_\pi$ if $\pi^* = \pi.i$ for some positive integer i.

Note : Let us call a rule α -rule iff it is one of these E-rules namely (E. $\sim\sim$), (E.&), (E. $\sim V$), (E. $\sim \supset$), (E. \forall), (E. $\sim \exists$), (E. \exists) and (E. $\sim \forall$). A rule is called β -rule iff it is one of these E-rules namely (E.V), (E. $\sim \&$), (E. \supset), (E. \equiv) and (E. $\sim \equiv$). Further we call a rule δ -rule iff it is one of these E-rules namely (E. \diamond), (E. $\sim \Box$), (E. \Box)(a), (E. \Box)(b), (E. $\sim \diamond$)(a) and (E. $\sim \diamond$)(b).

Now we would like to prove a theorem that would show in precise sense that the applications of E-rules preserve the property of branch embeddability.

Lemma 5 :

Let \mathcal{B} be a branch of a first-order M-tree that is first-order M-embeddable. Then

(a) if \mathcal{B}^* is obtained from \mathcal{B} by an application of either α -rule or δ -rule then \mathcal{B}^* must be first-order M-embeddable,

(b) if \mathcal{B}_l^* and \mathcal{B}_r^* are obtained from \mathcal{B} by an application of β -rule then either \mathcal{B}_l^* or \mathcal{B}_r^* is first-order M-embeddable.

Proof :

Here we will not prove the Lemma in detail but as a sample we prove that the application of δ -rule to an embeddable branch preserves embeddability.

Let the branch \mathcal{B} of an M-tree be first-order M-embeddable. Then by definition there exists a first-order model system $\Omega = (\mathcal{M}, \mathcal{R})$ with a function $\alpha : \text{Tag}(\mathcal{B}) \rightarrow \mathcal{M}$ \ni for any model set tag $\pi \in \text{tag}(\mathcal{B})$, $\alpha(\pi) = \Delta_\pi \in \mathcal{M}$ satisfying these conditions :

(i) if πK occurs in \mathcal{B} then $K \in \Delta_\pi$

(ii) $\Delta_{\pi^*} \mathcal{R} \Delta_\pi$ if $\pi^* = \pi.i$ for some positive integer i .

Let \mathcal{B}^* be obtained from \mathcal{B} by an application of δ -rule. Then these following cases would arise namely $(E.\Box)(a)$, $(E.\Box)(b)$, $(E.\sim\Diamond)(a)$, $(E.\sim\Diamond)(b)$, $(E.\Diamond)$ and $(E.\sim\Box)$.

Case $(E.\Box)(a)$

Let \mathcal{B}^* be obtained from \mathcal{B} by an application of $(E.\Box)(a)$. Then for some wff of the form $\Box K$ and for some model set tag π , $\pi \Box K$ occurs in \mathcal{B} and \mathcal{B}^* is obtained by adjoining πK to \mathcal{B} . Since \mathcal{B} is first-order M-embeddable $\Box K \in \Delta_\pi$ as $\pi \Box K$ occurs in \mathcal{B} . Now by reflexivity of \mathcal{R} and (Cg. \Box), $K \in \Delta_\pi$. Clearly $\Omega = (\mathcal{M}, \mathcal{R})$ is desired model system for \mathcal{B}^* also.

Case $(E.\Box)(b)$

Let the branch \mathcal{B}^* be obtained from \mathcal{B} by an application of $(E.\Box)(b)$. Then for some model set tag π , π^* in \mathcal{B} such that $\pi^* = \pi.m$ for some positive integer m , and for some wff of the form $\pi \Box K$ occurs in \mathcal{B} and \mathcal{B}^* is obtained from \mathcal{B} by adjoining the node $\pi^* K$ to end to \mathcal{B} . Since \mathcal{B} is first-order M-embeddable $\Box K \in \Delta_\pi \in \mathcal{M}$ and $\Delta_{\pi^*} \mathcal{R} \Delta_\pi$ holds. Hence, by (Cg. \Box) $K \in \Delta_{\pi^*}$. Now \mathcal{B}^* is clearly first-order M-embeddable in the model system $\Omega = (\mathcal{M}, \mathcal{R})$.

Case (E. \diamond)

Let the branch \mathcal{B}^* be obtained from \mathcal{B} by an application of (E. \diamond). Then for some model set tag π and for some wff of the form $\diamond K$, $\pi \diamond K$ occurs in \mathcal{B} and for some model set tag $\pi^* = \pi.m$ such that $\pi.m$ is a tag not occurred in \mathcal{B} . \mathcal{B}^* is obtained from \mathcal{B} by adjoining the node $\pi.mK$ at the end of \mathcal{B} . But \mathcal{B} is first-order M-embeddable, thus $\diamond K \in \Delta_\pi \in \mathcal{M}$. Then by (C. \diamond), for some model set $\Gamma \in \mathcal{M}$ such that $\Gamma \mathcal{R} \Delta_\pi$, $K \in \Delta_\pi$. Now we extend our a to a^* such that a^* is function from $\text{Tag}(\mathcal{B}^*)$ to $\mathcal{M} \ni a^*$ ($\pi.m$) = Γ and a^* restricted to $\text{Tag}(\mathcal{B})$ coincide with a . Our extension of a to a^* is legitimate because the tag $\pi.m$ is not in the domain of a and $a^*(\pi.m) = \Gamma$ is known to be an alternative to Δ_π . Now the conditions (i) and (ii) are automatically satisfied. Hence \mathcal{B}^* is first-order embeddable by the same model system in which \mathcal{B} is first-order M-embeddable.

Note that the proof of cases (E. $\sim \diamond$)(a), (E. $\sim \diamond$)(b), (E. $\sim \Box$) are analogous to the cases (E. \Box)(a), (E. \Box)(b), (E. \diamond) respectively. Further we note that the proof of rest of the cases of an application of α -rule or β -rule are analogous to the proof of the case (C. \Box)(a) because in these cases we do not go outside of the model set tag. This completes the proof.

Remark 3 :

Here we may conclude that if any branch of a first-order M-tree is first-order M-embeddable then at each stage of our tree construction, we must have at least one branch which is first-order M-embeddable and hence the tree must not be closed.

Def : A first-order M-tree with I. $\sim K$ as its origin node is called a *first-order M-proof tree* for the wff K .

Def : A wff K of \mathcal{L}_m^* is called a theorem of H_m ((the system M of Hintikka) in symbol $\vdash_{Hm} K$), iff there exists a closed first-order M-tree for the wff K .

Def : Let $\Sigma = \{L_1, L_2, \dots, L_n\}$ be a finite set of wff and K

be any wff of \mathcal{L}_m^* . K is derivable from Σ in H_m (in symbol $\Sigma \vdash_{H_m} K$) iff $\vdash_{H_m} (L_1 \ \& \ L_2, \ \& \ \dots, \ \& \ L_n) \supset K$.

Def : A wff is called *inconsistent* in H_m iff it is the denial of a theorem of H_m . A wff is called *consistent* iff it is not inconsistent.

Theorem 1 : (Consistency result for H_M)

Every theorem of H_m is first-order Kripke valid. In other words, for any wff K , if $\vdash_{HM} K$ then $\models_K K$.

Proof :

Assume $\not\models_K K$. Then the wff $\sim K$ is first-order Kripke satisfiable. Hence by corollary 4, $\sim K$ is first-order M-embeddable. Thus, by our *Remark 3* the first-order M-tree with $\sim K$ as its origin node cannot be closed. Hence, $\not\vdash_{HM} K$. This completes the proof.

Theorem 2 : (Rule consistency result for H_M)

For any finite set $\Sigma = \{L_1, L_2, \dots, L_n\}$ of wffs and for any wff K of \mathcal{L}_m if $\Sigma \vdash_{HM} K$ then $\Sigma \models_K K$.

Proof :

Assume $\Sigma \not\models_K K$. Then the wff $L_1 \ \& \ L_2, \ \& \ \dots, \ \& \ L_n \ \& \ \sim K$ is first-order Kripke satisfiable. Then by *Corollary 4*, $L_1 \ \& \ L_2, \ \& \ \dots, \ \& \ L_n \ \& \ \sim K$ is first-order M-embeddable. Thus by *Remark 3*, the first-order M-tree with $L_1 \ \& \ L_2, \ \& \ \dots, \ \& \ L_n \ \& \ \sim K$ as its origin node must have at least one complete open branch. Therefore $\Sigma \not\vdash_{HM} K$. This completes the proof.

Theorem 3 : (Completeness result for H_M)

Every first-order Kripke valid formula is a theorem of H_M . In other words, for any wff K , if $\models_K K$ then $\vdash_{HM} K$.

Proof : Assume that $\not\vdash_{HM} K$. Then the first-order M-proof tree for the wff K with (i. $\sim K$) as its origin node is not closed. But every such tree is completable either by finitely or denumerably many steps. Let \mathcal{B} be one such complete open branch. Then by our *Remark 2(b)*, \mathcal{B} determines a first-order model system say $\Omega = (\mathcal{M}, \mathcal{R})$ with $\{\sim K\} \subseteq \Sigma$ for some model set $\Sigma \in \mathcal{M}$. Thus, $\sim K$ is first-order M-embeddable. Therefore by *Corollary 2*, $\sim K$ is

first-order Kripke satisfiable. Hence $\not\models_K K$. This completes the proof.

Theorem 4 : (Rule completeness result for H_M)

For any finite set $\Sigma = \{L_1, L_2, \dots, L_n\}$ for wffs and for any wff K of \mathcal{L}_m if $\Sigma \models_K K$ then $\Sigma \vdash_{HM} K$.

Proof :

Assume $\Sigma \not\vdash_{HM} K$. Then every first-order M-proof tree with L_1 & L_2 , & ..., & L_n & $\sim K$ as its origin node must not be closed. But every such tree can be completed in finite or denumerably many steps. Let \mathcal{B} be one of the complete open branch of such a tree. Thus by our Remark 2 (b) there exists a first-order model system $\Omega = (\mathcal{M}, \mathcal{R})$ with $(L_1 \& L_2, \& \dots, \& L_n \& \sim K) \in \mathcal{B}$ which is first-order M-embeddable. Thus by Corollary 2, $(L_1 \& L_2, \& \dots, \& L_n \& \sim K)$ is first-order Kripke satisfiable. Therefore $\Sigma \not\models_K K$. This completes the proof.

Remark 4 : From out Theorem 1 and 3 it follows that for any wff L of \mathcal{L}_m^* $\vdash_{HM} L$ iff $\models_K L$. Then $\not\vdash_{HM} L$ if $\not\models_K L$

$\therefore \sim L$ is consistent in H_M iff $\sim L$ is first-order Kripke satisfiable.

$\therefore L$ is consistent in H_M iff L is first-order Kripke satisfiable.

Note that from Remark 1 and Remark 4, it follows that tree-characterization of consistency, Hintikka's notion of first-order embeddability and Kripke's characterization of first-order satisfiability are equivalent properties.

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An Account of Social Self: 'Being-In-The-World'

Nini Chanda

The basic issues in the philosophy of mind concern whether the mind exists, and, if it does, what its nature is, and what its relation is to other existents. With regard to such question, traditional as well as modern philosophies of mind can be divided into two broad categories—the dualist theories and the materialist theories of mind.

A variety of theories both on the dualist side and on the flip side have arisen each with the intention of avoiding the drawbacks of and improving upon its predecessor. Yet the mind-body problem remains unresolved, and philosophers continue to debate on the issue.

In the first section of this paper I will discuss some of the dominant paradigms in this debate. In section II the concept of social self as an alternative way of looking at this seemingly intractable problem will be discussed. In section III a Dual-Swing Model will be discussed to which most theories of social self can be assimilated.

I

Any discussion of the philosophy of mind invariably begins with a reference to Descartes' mind-body dualistic position; for it is chiefly his dualistic doctrine that has provoked the medley of theories that we find in the philosophy of mind. Descartes recognized mind and body both as substances having no dependency between them. Bodies like chairs, rocks, trees, exist independently of mind. Minds can exist independently of bodies. This "disengaged", "disembodied" mind is shorn of social and cultural relations and shared projects. This solipsistic picture endangers us to an isolated and lonely life. On this model, we cannot ever know directly what someone is thinking or feeling, for his mind is insulated. Each person has 'privileged access' only to his own mind, not to that of others. Descartes's search for

essences, which in his philosophy, in principle, insulates man from man, neglects the importance and value of a collective existence — this has grim moral and political implications. The Cartesian agent is solitary, divided from other human beings by deep walls and barriers. Social bonds are not primary in his existence, but are only of secondary importance. But a morally mature self can emerge only out of a process of intersubjective osmosis that always takes place within a social context.

Presently, the dominant paradigm in the philosophy of mind is physicalist. There seems nothing fuzzy in the nature of the physical. The nature of the mind may however perplex us. In this vein, Behaviourism, which denies the existence of the human mind and of human motives, claims that mind and its states are unreal and the only reality is physical stimuli and bodily response or dispositions to respond. In this way Behaviourism tried to avoid some problems of Cartesian dualism, particularly the problem of interaction between two *essentially* different substances like the mind and the body. But this leaves us uneasy. For, surely it is possible that two people have an identical response, say laughter, yet they be in two distinct states of mind one, great joy, and other, profound grief? Again, mental states like knowing, believing and expectation are sometimes triggering causes of behaviour, for example, we expect it will rain and carry an umbrella etc. Clearly Behaviourism achieves parsimony at the cost of remaining inadequate and incomprehensive in its explanation of man.

For such reasons, Place, Smart, Feigl, Armstrong, et al, proposed a middle way, the Identity Theory, which allowed that at least some mental states and events are genuinely inner and episodic, distinct from either dispositions or behaviour. But contrary to dualism they are not ghostly, or non-physical either — they are neurophysiological. They are identical with states or events occurring in their owner's central nervous system. For Identity Theorists, mental states are identical with brain states just as lightning is identical with electric discharge.

If the Identity Theorist is right, then man becomes a neuro-

physiological network, and a neurophysiologically predetermined system. In that case man becomes bereft of volitions and hence of an ethical life—for volitions is the gateway to a moral life. We are then condemned to the life of beasts. But our relation to the world is normative. Thus the Identity Theory in trying to dissolve the metaphysical mind of Cartesian dualism ushers in fresh problems.

One of the most fashionable models today in the circuit of philosophy of mind is the computational model. Human beings are viewed as information-processing systems. Artificial Intelligence Theorists aimed to show that the advance in computer technology would make possible the replacement of human mind by artificial intelligence. But Artificial Intelligence has its limitations. Computer programs can hardly capture the richness of human experience. Current computer programs use brute-force search and search-tree methods, which are undoubtedly fast and efficient processes, but they fall short in some crucial areas like developing new conceptual systems, or surpassing the program fed to them and suggesting a new method or move. Computer programs are composed syntactically. But thinking involves more than jugglery with formal grammatical rules; it involves meaningful semantic contents. The Chinese Room Experiment shows that embodied experience is necessary for the development of semantics. Semantics do not develop in isolation, but only in the context of man's experience in relation to the world he experiences. The computer can decode and implement a program, but it cannot create, it cannot judge. However advanced may be its ability to simulate, the computer is unable to duplicate these features. Further, if a human being forgets to perform a task he was supposed to perform, he feels shame, and we often say that he 'forgot' to do it. But we never attribute shame or forgetfulness to the computer. If it fails in a programmed task, we attribute the lacuna to a fault in the circuit, or to such other cold fact. The computational approach seems to be an inadequate model of man, and again we get drowned in a previous anxiety that if computers and robots become 'de facto'

men, we get reduced to a-ethical, a-religious, non-creative, automation like creatures.

II

The Expansive concept of the Social Self makes us weary of the narrow polarities of subjectivity and objectivity, of the over-emphasis on essences of classical metaphysical thinking.

In the concept of social self there are no essences — there are only human beings living their lives in juxtaposition with their physical environments, and socio-cultural milieu. An idea of my 'self' and other 'selves' emerges through interpersonal encounter. Such an idea of self comes forth from our lived experience, not from cut and dry intellectual wielding of arguments.

Martin Buber rejected the identification of the self with any aspect of the individual which may be thought to constitute the essence. This includes the identification of the self with consciousness, mind, or body.

For Buber the notion of personal identity is the result of interpersonal relation. What ultimately identifies a person and makes him unique is his reciprocal relation with the other person(s). Hence a person's real presence is dependent not on his location in space and time, but on the capacity to say "Thou", and have it reciprocated from others. Persons invoke each other and are stimulated by each other's presence.

The emergence of dialogical philosophy as the philosophy of 'the other' or the "new thinking" is the subject of our interest here. This new trend in contemporary philosophy is known under different names, such as, "I-Thou" relation, 'interpersonal encounter', 'dialogicalism' and 'new thinking'.

In his last major work *Knowledge of Man* Buber explained how men interact with each other on the basis of a two-fold movement — 'distance' and 'relation'. Man acquire a separate individuality by setting the other at a distance; from the platform of his separate existence he nonetheless enters into a relation with or faces the other warmly—this is the dynamics of the I-Thou relationship.

Here two different beings meet, a unity is created without obliterating the distinctness of the different beings.

Hans Ehrenberg, one of the proponents of the new thinking rejects the idealistic theory of the trans-individual consciousness, and replaces it with the relation of I and Thou. Ferdinand Ebner, another advocate of this club, rejects the ideal or abstract "I". The latter is for him a matter of conjecture. The "I" is the socially embedded "I", the "real man".

A corroboration of this approach is found in the Dasein of Heidegger. There is no separation of Dasein, that is, Being-in-the-world from the world. Our interacting in and with the world constitutes our being. For Heidegger man is not an assimilation of spirit / mind / soul and body, but he is man who lives and struggles in the world. This is evident in his notion of Care, which denotes Dasein's involvement in the world. Thus Heidegger's Dasein, his notion of Care, provides a notion of the self outside the Cartesian tradition.

The idea of the self that we find in the new thinking avoids many of the problems inherent in those philosophies concerned with a search for essences. Dasein or Being-in-world, does not, for example, encounter the problem of knowledge of other minds, which on the premise of 'privileged access' remains insurmountable; but, Beings-in-the world can have knowledge of others, and in fact they function perfectly well with such knowledge.

The Social Self model which gives central importance to interpersonal encounter and existence, restores man's normative life which was crushed by both the Cartesian and physicalist model. If on the physicalist premise man is either physiological or mechanical clockwork, there remains no room for ethical choices or judgement. The computer, for example, could be programmed with some blanket ethical rules—but sometimes we break rules bearing in mind the uniqueness of a situation, for examples telling lies to avoid hurting someone. How would the computer fathom the need of the hour, the peculiarity of situations? Again, the

Cartesian mind's Robinson Crusoe-type of existence hardly allows a robust ethical life. The new thinking brings the ideas of 'good', 'bad', 'responsibility', etc. within the sphere of our living. Ethics begins in our encounters with others. The ought is here not a phenomenon of an individualistic vacuum, but grows, is modified and is sustained in our social context, in the life of the socially involved man.

The self that we are vindicating does not fraught out beings with identity/essences/oppositions. Here the self is more tangible. It is not given but formed when the individual enters the presence of others. Here self is not understood in the taxonomies of mind or body, but in terms of societal corporeality.

George Herbert Mead, who was influenced by the pragmatist philosopher William James, is remembered for having broken the shackles of the Cartesian concept of an isolated non-social self. According to Mead, the qualities and actions of individuals are a response to, and at the same time a stimulus to that of his fellow-beings.

Mead finds the genesis of human communication in this process for— "The probable beginning of human communication was in cooperation, not in imitation, where conduct differed and yet where the act of the one answered to and called out the act of the other."¹ Mead considers social communication to be the plinth on which selves and minds arise. According to Mead language which draws immediate attention plays a crucial role in social communication. Mead agrees with Wittgenstein that there is no private language which describes private experience. For, experience which is expressed in terms of language refers to socially embedded or constructed meanings and concepts, even when the dialogue is an introspective one. Even when we are talking to ourselves, judging or estimating ourselves, the 'other' tacitly enters our appraisal.

The fact that the role of the 'other' is paramount in our interpersonal as well as intrapersonal relations is clear from the vital relation between shame and society. In most other emotions, the involvement of the other is not beyond doubt. For example love

should ideally involve respect, pride etc.. But in some cases these elements are absent—the 'other' is actually nonconsequential. Here there is only the person's own need to love. Similarly love and respect should be the ingredients of pride. But if pride becomes only an instrument for ego-satisfaction, the 'other' becomes non-consequential. But shame, whether before others or oneself, always contemplates others' impression or estimate. Thus the relation between self and society can be cashed out in terms of 'shame'. Much of our morality is guided by the shame that we apprehend if we deviate from moral norms. Normal shame is thus necessary for regulating our social interactions. This thought finds corroboration in David Hume when he says What restraint, therefore, shall we impose on women, in order to counterbalance so strong a temptation as they have to infidelity? There seems to be no restraint possible, but in the punishment of bad fame or reputation.''² Shame can be constructive as well as destructive. We remain morally upright because we are fearful of public opinion or criticism. The culture of shame restrains us from ill-doing and is constructive. But if a person is always fearful of possible failure and consequent shame, he may not be able to explore and harness his potentials. This is destructive shame. Again, if a person loses all sense of shame, he does not refrain from even the lowliest of conduct, which often brings about his ruin. Here shame has a destructive role, for the shame-less person, along with himself, also subverts society.

Shame can be individual as well as collective. For any nation child-marriage, 'sati', child-labour etc. are social shames. This vital connection between shame and social life underscores the primacy of social relations and activities, the fact that the self is a part and parcel of the on-going social process.

III

The nature of social self that we wish to vindicate can be exemplified by a Dual Swing Model based on Buber's philosophy of dialogue and the idea of a two-fold movement (setting at a

distance and entering into relation), mentioned earlier, and Vico's concept of *sensus communis*. The Buberian selves communicate but do not forsake their separate identities for this meeting. The idea of this dialectical relation together with the principle of *sensus communis* can unite man in a dynamic holistic relationship. The *sensus communis* is communal — it addresses the common ground of truth for the community as a whole. It says that community must have some shared values—it is sceptical of relativism and suggests that there must be a limit to toleration both in theory and practice: in education, in law, in politics. The *sensus communis* we may say, grounds the universal communicability of aesthetic pleasure, humour and so much more that we share with our fellow-beings. It is the corner stone of public discourse. A Dual-swing model in which different beings reach out without eliminating the otherness or distinctiveness of each, together with the principle of *sensus communis* which puts forward the unity of mankind as the principle of culture, gives useful insights into interpersonal and intercultural communication.

It is not suggested that the concept of Social Self resolves all the problems in the sphere of philosophizing about mind, body, and self, nevertheless it is more accommodating, and provides a new understanding of issues like, otherness, communication, freedom and morality. Spelled out in more detail, it could be a fruitful way forward. Without straitjacketing essences, there is a merciful release from solitariness into unison.

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